

CHIGNIK AREA COMMERCIAL SALMON FISHERY
REPORT TO THE ALASKA BOARD OF FISHERIES

By

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INTRODUCTION

Background

Area Description

The Chignik Management Area (CMA) includes all coastal waters and inland drainages of the northwest Gulf of Alaska between Kilokak Rocks and Kupreanof Point on the Alaska Peninsula (Figure 1). This area is bordered by the Alaska Peninsula Management Area to the west and the Kodiak Management Area to the east. The CMA includes approximately 100 salmon producing streams, the most important being the Chignik River system. The major features in this watershed are two large, interconnected lakes; Black and Chignik Lake, with a single outlet that empties into a nearly enclosed estuary, Chignik Lagoon (Figure 2).

The CMA is divided into five districts which are, from east to west, the Eastern, Central, Chignik Bay, Western, and Perryville Districts (Figure 3). These areas are further broken down into sections and statistical reporting areas within each district (Figure 4). Within the CMA, commercial and subsistence salmon fishing are the economic mainstay for five villages: Chignik Bay, Chignik Lagoon, Chignik Lake, Perryville and Ivanof (Figure 3). Although shoreside processing capacity is centered in Chignik Bay, permit holders or crew members reside in all the villages. At present, these villages derive very little commerce from the sport fishery and harvests are relatively low.

Fishery Description and Management Overview

Five species of Pacific salmon are commercially harvested: chinook *Oncorhynchus tshawytscha*, sockeye *O. nerka*, pink *O. gorbuscha*, chum *O. keta*, and coho *O. kisutch* salmon. Purse seines and hand purse seines are the only legal commercial gear types allowed to harvest these species within the CMA. However, legal seine gear length varies from 100-125 fathoms in the Chignik Bay District to 100-225 fathoms in all other districts. Up to 102 permits have been fished within the last 10-years (Figure 5).

In June, salmon management is based on the run strength of sockeye salmon returning to the Chignik Lakes system, and the Chignik Bay District opens concurrently with the Central and Eastern Districts (Figure 6). This management strategy has been approved by the State of Alaska Board of Fisheries (BOF) and put into regulation as the Eastern District Management Plan, 5 AAC 15.360 (a) (ADF&G Regulations, 1997-1998 Edition). Openings in districts outside of the Chignik Bay District during July, August, and early September depend not only on the run strength of pink, chum, and coho salmon but also on the run strength of sockeye salmon to the Chignik Lakes system (Figure 6).

The first opening in the Chignik Bay District may occur when the June 12 interim escapement goal or a subsequent escapement goal is exceeded and accompanied by a significant sockeye buildup within the Chignik Lagoon. All following openings occur when interim sockeye escapement goals are achieved or surpassed. The annual sockeye escapement goal for Black Lake is 400,000 and for Chignik Lake is 250,000 through August 31. From September 1-15 the Chignik Lake sockeye escapement goal is 20,000-25,000 (Table 1).

The Eastern District Management Plan states, that the department may close the Eastern District for the period between the first (Black Lake) and second (Chignik Lake) sockeye salmon runs, 5 AAC 15.360 (a). In practice, the Western and Perryville Districts are also closed to facilitate scale pattern analysis which is used to evaluate stock composition. The Eastern District Management Plan also directs the department to close the Eastern District on July 15 to allow evaluation of the strength of the pink and chum salmon runs, 5 AAC 15.360 (b).

In the Western and Perryville Districts, the earliest an opening may occur is on July 6 and only on a commercial test fishery basis. The only exception is within Ivanof Bay of the Perryville District where, during late June, the surplus of a large early chum run could be harvested. Additional openings depend on the evaluation of pink and chum catches until actual escapement is estimated by aerial stream surveys. During most of the season, fishing is allowed only seaward of a line drawn from Cape Ikhti to Coal Cape to Cape Alexander (Figure 7). This allows for an aggressive harvest strategy, promotes quality, and prevents overexploitation of any particular stock.

To enhance coho escapement and subsistence catches for Perryville residents in the Kametolook River, the Western and Perryville Districts may close on or about August 20. The exact closure date and any future openings in these districts, depends primarily on coho abundance as measured relative to historical coho catch records. Other management options in late August to early September include, fishing within Ivanof Bay if a large coho run is aerial surveyed there, and/or allowing fishing in the Castle Cape Section in years of high abundance in the Chignik Lake system.

In 1996, the BOF closed waters around Kupreanof point: the dividing line between Area M (South Peninsula) and Area L (Chignik). These closed waters are in effect between July 6 and August 31 (Figure 8).

After September 15, the emphasis of sockeye management shifts from the commercial fishery to the needs of subsistence users. Subsistence users primarily utilize sockeye salmon "redfish" returning to the Clark River, tributary to Chignik Lake (Figure 2). Late sockeye run strength is assessed by aerial surveys, catch/escapement ratios, and comparison of current harvests with historical catches. Beginning September 15, management options include; a complete closure, or a 48-hour (or less) fishing period that can be structured into one, two, three, or four commercial fishing days.

OVERVIEW OF THE 1998 SALMON SEASON

Highlights of the Season

The Chignik Management Area commercial salmon season was characterized by a weak sockeye run to Black Lake and a slightly below average sockeye run to Chignik Lake. On June 16, the commercial fishery was opened but a strike postponed actual fishing. For approximately the next two weeks, the fishery was extended for 24-hour increments as the strike continued. On June 29, the strike was settled between fishers and processors and commercial fishing began. Because of the low sockeye salmon forecast for 1998 (1.1 million catch in the CMA); only 85 permit holders fished, the lowest since 1976 (Figure 5).

The Central District was opened concurrently with the Chignik Bay District throughout the entire season. Whereas, the Eastern District was only opened concurrently with the Chignik Bay District through July 12. After that, the Eastern District was closed from July 13 through July 25 to allow for pink and chum escapement to that district. Little fishing occurred after July 27, even though the district was open, because of the unavailability of a market for water marked pink salmon.

Inseason sockeye scale pattern analysis indicated that the transition from Black Lake to Chignik Lake occurred on July 8 (50/50 stock composition). After that date, management emphasis shifted from primarily attaining the Black Lake sockeye escapement to that destined to Chignik Lake.

In the Western and Perryville Districts, the first commercial fishery was warranted on a "test fishery" basis on July 13. As the season progressed, additional commercial openings were warranted as pink and chum salmon interim run timing escapement goals were achieved. The last commercial fishing date in the Western and Perryville Districts was on August 20. The department utilized this early closure to enhance coho escapement to the Kametolook River as well as to other coho streams in these two districts.

Although the last CMA commercial salmon fishery was on September 15, the season was never closed by emergency order. This allowed for the possibility of a commercial fishery if sockeye salmon were surplus to late season subsistence needs.

The total 1998 season harvest of 2,093,908 ranked the 26th lowest of 39 years since 1960 (Table 2 and Figure 9). Commercial salmon were delivered 2 days in June, 30 days in July, 26 days in August, and 9 days in September (Table 3).

Value

The total exvessel value of the 1998 commercial salmon harvest of \$7.5 million is about \$5.4 million less than the 1989-1998 value of \$12.9 million (Table 4 and Figure 10). The 1998 average value per permit holder is approximately \$88 thousand (Figure 5). The average value of the fishery has decreased approximately \$5.1 million between the periods 1989-1998 and 1979-1988.

Chinook Salmon

Background

Chinook escapement is limited primarily to the Chignik River system, the largest chinook system on the south side of the Alaska Peninsula (Table 5; Figure 1). Although there is not a directed fishery within the CMA, chinook salmon are harvested incidentally during the directed sockeye fishery. The chinook harvest and escapement occurs primarily during July and August, peaking in July.

Chinook runs (catch and escapement) have ranged from a low of 927 fish in 1974 to a high of 21,461 fish in 1993 (Table 5; Figure 11). The recent 10-year average run is 10,233 fish. Commercial catches have increased from an average of 1,308 fish (1969-1978) to 6,745 (1989-1998). A corresponding increase in escapement has also occurred within the past ten years (Figure 11).

1998 Management

The 1998 chinook escapement of 3,075 was the fifth highest since 1963 (Tables 5 and 6). However, chinook escapement counts are not adjusted for those removed by the sport fishery or those that spawn below the counting weir.

The CMA chinook harvest of 4,395 fish was the eighth highest since 1960 with the largest catches coming from the Chignik Lagoon (1,721 fish) and the Central District (1,786 fish) (Table 7). The highest catches are ordinarily reported from the Chignik Bay District. The harvest occurred from June 29 to September 15 with a peak on July 6 of 215 fish (Table 4).

Value

The total exvessel value of the 1998 chinook harvest is estimated at \$32 thousand, averaging \$4 hundred per permit holder (Table 4 and Figure 10).

1999 Forecast

The 1999 chinook harvest forecast is estimated at 4 thousand. The chinook harvest is dependent upon the amount of fishing time allowed for sockeye salmon in July: the harvest projection approximates the 5-year average, 1993-1998.

Sockeye Salmon

Background

Economically, sockeye salmon are the most important commercial salmon species in the CMA. The commercial salmon fishery targets two runs of sockeye salmon returning to the Chignik Lake and Black Lake systems. Sockeye salmon have been aerial surveyed in other CMA streams but in low volumes.

Sockeye salmon destined for the Chignik-Black Lakes system are also intercepted outside the CMA in two historic fisheries; one to the east in the Cape Igvak Section of the Kodiak Management Area (15% allocation through July 25) (5 AAC 18.360, Cape Igvak Salmon Management Plan)(ADF&G Regulations, 1997-1998); and one to the west in the Southeastern District Mainland of the Alaska Peninsula Management Area (6% allocation through July 25) (5 AAC 09.360, Southeastern District Salmon Management Plan) (Tables 8-9 and Figure 1) Eighty percent of the sockeye salmon harvested in these intercept fisheries are considered Chignik bound.

Commercial fishing time for sockeye salmon has been regulated based on achieving interim threshold escapement goals by specific dates for each run (Table 1). Achieving these goals is complicated by the run timing overlap of the two sockeye runs (the transition period), which generally occurs during late June to early July. This is a critical time for management biologists who must assess the catch using age and stock composition to determine which stock dominates.

Scale pattern analysis (SPA) is currently used inseason and postseason for apportioning sockeye salmon to the stock of origin, Black Lake or Chignik Lake. During the transition period, sampling effort is increased from once a week to every third day to assess the changing age and stock composition. Subsequently, fishing time may be increased to harvest early run fish or may be decreased to allow time for evaluating the late run strength.

The age composition of the early run is dominated by age-1.3 and -1.2 fish and the late run by age-2.3 and -2.2 fish. Historically, it is unusual for the early run to have many age-2.2 fish or for the late run to have a very large percentage of age-1.2 fish (Table 10).

Aerial surveys have been conducted on the spawning grounds almost every year since 1960 and are used to estimate sockeye escapement distribution.

The criteria established by the BOF to allocate Chignik bound salmon at Cape Igvak and Southeastern District Mainland each year through July 25 was extrapolated from July 26 through the end of each year's fishing season to estimate total catch of Chignik bound salmon. However, limited tagging data was used to initially establish the 80 percent harvest rate of Chignik bound salmon and extrapolation of this data to the entire season is based on these same studies. Therefore, caution should be used in interpreting any of these estimates (Table 11).

Since 1954, estimated sockeye runs based on run reconstruction (catch and escapement) have ranged from a low of 554,431 fish in 1954 to a high of 4,464,678 fish in 1984 (Table 11 and Figure 12). The most recent 10-year combined average run (Chignik and Black Lake) from 1989-1998 of 2,703,905 fish has shown very little additional growth from the previous ten years, 1979 to 1988. Comparing lakes, the Black Lake sockeye run has decreased from the 1979-1988 average of 1,567,932 to the 1989-1998 average of 1,333,011. The Chignik Lake run increased from the 1979-1988 average of 1,067,773 to the 1989-1998 average of 1,370,895 (Tables 11-13, and Figure 13). Recruit per spawner relationships for both lakes have shown the lowest return for brood years 1991 and 1992 since 1985 (Figure 14).

There has been a general trend for a larger proportion of the sockeye salmon to be caught in districts outside of the Chignik Bay District (Table 7 and Figure 15). Most of this increased harvest has been in the Central District and has mirrored the decrease in the Chignik Bay District. Since 1993, the proportion of Chignik Bay sockeye catches has ranged between 45% to 63% and the Central District between 24% to 38%. Since 1990, these two districts have averaged over 88% of the total sockeye harvest. Catches in the Eastern, Western, and Perryville Districts have remained stable at under 10% per district.

For the CMA permit holders, the most dramatic change in fishing location by district began in 1992. Since then, permit holders are trending towards three distinct fishing strategies: 1) one group fishes only the Chignik Bay District, 2) another group fishes only districts outside the Chignik Bay District, and 3) a third group fishes all the districts within the CMA. Permit holders following the strategy of fishing either within Chignik Bay or outside of Chignik Bay have increased, while those that fish both areas have decreased (Figure 16).

1998 Escapement and Catch

The Chignik River weir, located three miles upstream from Chignik Lagoon (Figure 2), was operational from May 24 through September 4. Since 1996, the Exxon Valdez Oil Spill funding has allowed salmon to be counted through September 4. This is the latest date fish have been counted through the weir since the 1950s.

Since 1994, an underwater video camera counting and taping system has been used to count and estimate salmon escapement through the weir. In 1998, more confidence was gained in separating sockeye, coho, chinook, pink, and chum salmon from jack sockeye salmon and Dolly Varden. The 1998 estimated sockeye escapement counted through the weir until September 4 is 689,401. Post weir estimates from September 5 through the 15, using catch and escapement ratios prior to the weir removal, are estimated at 11,727 sockeye salmon (Table 12).

In 1998, the highest CMA sockeye catches came during mid to late July when the sockeye runs were transitioning from Black Lake run to Chignik Lake (Table 3). The Black Lake sockeye run totaled 724,082 fish with 410,659 estimated as escapement and 313,423 as catch. The Chignik Lake sockeye run totaled 1,217,606 fish with 290,469 estimated as escapement and 927,137 as catch (Table 11). Of the total sockeye catch considered destined to the Chignik Lake system through July 25, 786,466 were caught in the CMA, 8,813 were caught at Cape Igvak, and 66,893 were caught in Southeastern District Mainland (Tables 8, 9). The 1998 sockeye catches were harvested by district as follows: 59% in Chignik Bay, 27% in Central, 8% in Western, 3% in Eastern, and 3% in Perryville (Table 7). The sockeye catches during 1998 and 1997 were the lowest since a similar catch interval in 1989 and 1988 (Table 2).

Value

The total exvessel value of the 1998 sockeye harvest is estimated at \$6.6 million, averaging \$78 thousand per permit fished (Table 4 and Figure 10). The 1998 sockeye value is approximately \$4.7 million below the 1989-1998 average of 11.3 million (Table 4).

1999 Forecast

The 1999 CMA sockeye forecast is 1.3 million. The 1999 run forecast for Chignik and Black Lakes is based on the combined runs to these lakes using simple linear and polynomial regressions of sibling relationships, analysis of outlier data points, and medians.

Pink and Chum Salmon

Background

Pink and chum salmon production in the CMA is characterized by variable escapements and catches for both species (Tables 14-15). The variability in the returns can be attributed to the physical morphology of the river and stream systems, which are characterized by loose substrates and steep gradients. These

systems are impacted by fall, winter, and spring floods that may cause streambed scouring, and can result in high egg and fry mortality.

Management of the CMA pink and chum salmon fisheries is based on inseason aerial assessment of escapement (conducted annually since 1953), and catch per unit effort (CPUE) data. Aerial surveys of approximately 100 salmon streams, adjacent bays, and stream mouths are taken periodically throughout the season to provide the most current inseason escapement indices. Pink and chum escapement goals are derived by average run timing curves with the average peak count as the ultimate goal for a particular stream. Commercial test fisheries have been used to assess stock strength prior to the entry of pink and chum salmon into bays or streams.

Currently, all salmon processed locally are both for the fresh frozen and canned salmon market. To ensure quality, the fisheries are managed to harvest migrating fish prior to or just as they reach terminal waters.

Generally, CMA pink and chum escapement has increased in recent years (Table 14 and Figures 17-18). The largest pink salmon escapement is to the Eastern District and has been underharvested since 1995 (Tables 7, 14). The largest chum escapement is to the Perryville and Eastern Districts (Table 15). Early openings (late June-early July) in Ivanof Bay of the Perryville District have been utilized to harvest large chum runs. For both species, catch levels are below what could be expected from recent escapement, given a reasonable recruit per spawner ratio.

June commercial fisheries in the Chignik Bay, Central, and Eastern Districts are based primarily on sockeye salmon bound for the Chignik Lakes' system. Pink and chum salmon are caught incidentally and in low volumes.

During July, August, and September in the Chignik Bay and Central Districts, openings are based primarily on Chignik Lake sockeye salmon. Openings from early July through August in the Eastern, Western, and Perryville Districts depend primarily on the abundance of pink and chum salmon but also on Chignik Lake sockeye run strength.

The largest harvests, in late July and early August, come primarily from the Central, Western, and the Perryville Districts (Tables 3, 7). Typically by August 20, over 98% of the pink and 94 % of the chum salmon have been harvested (Figures 19-20).

Since 1960, pink salmon catches have ranged from 25,472 in 1973 to 2,997,159 in 1988. Average pink catch and escapement has generally increased from the 1960s (Tables 2, 7, 14, and Figure 17).

Since 1960 chum salmon catches have ranged from 8,717 in 1973 to 580,332 in 1981 (excluding 1989). Average chum catch and escapement has also generally increased from the 1960s (Tables 2, 7, 15, and Figure 18).

1998 Escapement and Catch

The 1998 CMA pink escapement of 1,881,779 was the sixth highest since 1963. The Eastern District was the only district with escapement (345,600 fish) above the 1988-1997 average. The 1998

Chignik Bay District escapement, compared to the 1988-1997 average, had proportionally the lowest escapement of any of the districts. (Tables 6, 14).

Although fishing was allowed almost continuously July through August, pink catches were 369,400 fish below the average catch from 1988-1997 (Table 2). The largest catches came from the Central and Western Districts (Tables 6, 7 and Figure 20). Peak pink catches were recorded between July 26 and August 13 (Table 3).

The 1998 chum escapement of 379,152 was the sixth highest since 1962 (Table 6 and Figure 12). The 1998 Perryville District escapement of 214,500 was 103,600 above the 1988-1997 average. All other districts were below the 1988-1997 average escapement (Table 15).

The 1998 chum catch of 128,841 was 72,050 below the 1988-1997 average catch with most fish caught in the Western and Central Districts (Table 7). There were no extremely large catch days, and harvests were distributed throughout July and August (Table 3).

Value

The exvessel value of the pink and chum salmon harvest was \$310 and \$137 thousand (Table 4 and Figure 10). The average value per permit fished was \$4 thousand for pink and \$2 thousand for chum salmon (Table 4).

1999 Forecast

The 1999 pink forecast is for 925 thousand and for chum salmon is 185 thousand. The catch should come mainly from the Western and Perryville Districts. The harvestable surplus is based on an average over the last 10-year period (Table 2).

Coho Salmon

Background

A directed CMA coho salmon commercial fishery begins in late August to early September primarily in the Chignik Bay District. Coho salmon are also harvested incidentally in the directed sockeye, pink, and chum commercial salmon fisheries throughout the season. Coho catches begin as early as June and have continued until the fishery closes, which could run by regulation through October 31. The catch volume makes a definite shift from outside districts to the Chignik Bay District in late August to early September (Figure 21). The highest coho catches, for most years, come primarily from the Western and the Chignik Bay Districts (Table 7) (Figure 22-23).

Since 1997, to enhance coho subsistence harvests by residents of Perryville in the Kametook River of the Western District, fishing has been closed post August 20. This closure could potentially cut the commercial coho catch by 20% as predicted from the average seasonal catch in the Western District from 1987-1996. Future Perryville District coho catches are expected to remain at low levels because (since 1996) Kupreanof Point has been restricted to fishing from July 6 through August 31. Total catches for the

years 1976 to 1998 have ranged from 17,430 to 370,400 fish with an overall trend of increasing catches since 1960 (Table 2 and Figure 24).

The Chignik Lakes' coho run is the largest within the CMA and one of the largest within the entire Westward Region. The Chignik River 1989-1998 escapement has averaged 42,800 fish, and the Chignik Bay catch has averaged 54,228 (Table 7). Since 1996, coho escapement is estimated by weir counts prior to weir removal on September 4. From September 5 to whenever fishing ceases, the relationship of coho catch and escapement is used to estimate coho escapement after the weir is removed. Other areas of high coho escapement concentrations are in Ivanof Bay of the Perryville District and several streams in the Eastern District. Overall, coho escapement monitoring and aerial surveying in the CMA is sporadic due to the late timing of the run and logistics involved in monitoring the many streams in the area.

1998 Management and Harvests

Coho escapement in the CMA is estimated by direct weir counts, catch and escapement ratios, or by aerial surveys. The Chignik Lakes' coho escapement was estimated directly from weir counts through September 4 at 14,124 (Table 13). Chignik post weir estimates, September 5-15, based on catch and escapement ratios prior to weir removal are estimated at 13,697 for a total coho escapement of 27,821.

An estimate of total coho escapement for the CMA is not possible because of the limited number of surveys that were taken and because dense spawning pink salmon schools may have obscured any coho escapement. However, coho aerial surveys of August 27 and September 4 showed coho entering some bays, stream mouths and streams. The largest concentration of coho salmon observed in the CMA was in the Ivanof River bay and mouth, 40,000 on September 4.

In the CMA in 1998, 129,512 coho salmon were caught and ranked as the twelfth largest harvest since 1960 and 78,163 below the average 1988-1997 catch (Table 2). The largest catches came from the Western District (65,979 fish) surpassing the catches from the Chignik Bay District (23,063 fish) or the Central District (32,723 fish) (Table 7 and Figures 22-23). The first coho harvests were on June 29 and the last on September 15. By month, 15 coho were caught in June, 46,533 were caught in July, 69,733 were caught in August, and 13,231 were caught in September. The highest harvest day was on August 12 when 6,590 coho salmon were caught with most of that (4,021 fish) coming from the Western District. Very few coho salmon were caught in the Eastern District (1,227 fish) because very little effort was expended in that district after mid July.

Value

The exvessel value of the CMA coho salmon harvest was \$397 thousand (Table 4 and Figure 10). The average value per permit holder was \$5 thousand (Table 4).

1999 Forecast

Harvest projections for Chignik Bay and outside catches are based on a 10-year average. The 1999 coho forecast is 185,000. However, coho harvests may be affected by the strength of the Chignik Lake sockeye run and the strength of the pink and chum runs. For example, a weak sockeye salmon second run (Chignik Lake) or a weak pink and chum run could severely curtail those fisheries and consequently, the incidental harvest of coho salmon.

LITERATURE CITED

ADF&G (Alaska Department of Fish and Game). Alaska Fish and Game Laws and Regulations Annotated, 1997-98 Edition. Division of Commercial Fisheries, Juneau.

Table 1. Chignik River system sockeye salmon escapement goals for the early run (primarily Black Lake) and late run (primarily Chignik Lake), by time period.

The numbers of fish presented in the escapement tables below were derived from escapement averages over several years of various run timings and magnitudes. It should be noted that daily escapement levels will fluctuate considerably throughout the run. The tables listed serve only as a guide for achieving the total escapement for each run. Inseason variations from the figures listed may be due to variations in actual timing and/or strength of the run. The September goal is set at 25,000 with the intention of providing sockeye salmon plentiful enough to be caught by subsistence users with a reasonable amount of effort.

Early Run-400,000 Escapement		
Date	Lower	Upper
June 12	-	40,000
June 14	50,000	65,000
June 16	75,000	100,000
June 18	125,000	150,000
June 20	175,000	200,000
June 22	225,000	250,000
June 25	275,000	325,000
June 30	350,000	400,000

Late Run - 250,000 Escapement to August 31				
Date	Early Escapement Is Achieved		Early Escapement Is Not Achieved	
	Lower	Higher	Lower	Higher
July 6			-	40,000
July 8			45,000	50,000
July 10		- 40,000	55,000	65,000
July 12	50,000	60,000	70,000	75,000
July 14	65,000	75,000	75,000	80,000
July 16	80,000	90,000	80,000	90,000
July 19	100,000	115,000	100,000	115,000
July 21	125,000	135,000	125,000	135,000
July 23	145,000	160,000	150,000	160,000
July 26	170,000	180,000	170,000	180,000
July 29	185,000	195,000	190,000	195,000
July 31	195,000	200,000	195,000	200,000
August 1- August 31	200,000	250,000	200,000	250,000
September 1 - September 15	250,000	275,000	250,000	275,000

Table 2. Commercial salmon catches in the Chignik Management Area by year, 1960-1998.

Year	Number of Fish ^{a,b,c}					Total
	Chinook	Sockeye	Coho	Pink	Chum	
1960	643	715,969	8,933	557,327	486,699	1,769,571
1961	409	322,890	3,088	443,510	178,760	948,657
1962	435	364,753	1,292	1,519,305	364,335	2,250,120
1963	1,744	408,606	9,933	1,662,363	112,697	2,195,343
1964	1,099	556,890	2,735	1,682,365	333,336	2,576,425
1965	1,592	599,553	9,602	1,118,158	120,589	1,849,494
1966	636	219,794	16,050	683,215	238,883	1,158,578
1967	882	462,000	13,150	108,981	75,543	660,556
1968	674	977,382	2,200	1,290,660	223,861	2,494,777
1969	3,448	394,135	18,103	1,779,736	67,721	2,263,143
1970	1,226	1,325,734	15,348	1,157,172	437,252	2,936,732
1971	2,010	1,016,136	14,557	612,290	353,952	1,998,945
1972	464	378,218	19,615	72,161	78,298	548,756
1973	525	870,354	22,322	25,472	8,717	927,390
1974	255	662,905	12,245	69,515	34,312	779,232
1975	549	399,593	53,283	66,165	25,161	544,751
1976	2,290	1,163,728	35,167	395,287	81,403	1,677,875
1977	710	1,972,207	17,430	604,806	110,452	2,705,605
1978	1,603	1,576,283	20,212	985,114	120,889	2,704,101
1979	1,253	1,049,497	99,129	1,905,198	188,907	3,243,984
1980	2,344	859,966	119,573	1,093,184	252,521	2,327,588
1981	2,694	1,839,469	78,805	1,162,613	580,332	3,663,913
1982	5,236	1,521,686	300,273	873,384	390,096	3,090,675
1983	5,488	1,824,175	61,927	321,178	159,412	2,372,180
1984	4,318	2,660,619	110,128	444,804	63,303	3,283,172
1985	1,888	922,151	191,188	160,128	22,806	1,298,161
1986	3,037	1,645,834	116,633	647,125	176,640	2,589,269
1987	2,651	1,898,838	150,414	246,775	127,261	2,425,939
1988	7,296	795,841	370,420	2,997,159	267,775	4,438,491
1989	3,542	1,159,287	68,233	27,712	1,624	1,260,398
1990	9,901	2,093,650	130,131	550,008	270,004	3,053,694
1991	3,157	1,895,665	165,625	1,169,248	261,096	3,494,791
1992	10,832	1,277,449	310,943	1,554,073	222,134	3,375,431
1993	19,515	1,697,351	229,459	1,648,377	122,360	3,717,062
1994	3,919	1,618,973	237,204	431,063	227,276	2,518,435
1995	5,261	1,724,045	280,605	2,057,998	380,949	4,448,858
1996	3,105	1,958,353	193,226	183,806	99,791	2,438,281
1997	3,032	769,683	90,908	844,431	155,905	1,863,959
1998	4,395	1,054,172	129,512	776,988	128,841	2,093,908
Avg (1969-78)	1,308	975,929	22,828	576,772	131,816	1,708,653
Avg (1979-88)	3,621	1,501,808	159,849	985,155	222,905	2,873,337
Avg (1989-98)	6,666	1,524,863	183,585	924,370	186,998	2,826,482
Avg (1988-97)	6,956	1,499,030	207,675	1,146,388	200,891	3,060,940

^a Does not include salmon caught for personal use or subsistence.^b Includes salmon caught in the test fishery.^c Does not include salmon caught at Cape Igvak or Southeastern District Mainland Destined to Chignik.

Table 3. Commercial salmon fishing effort and catch by day in the Chignik Management Area, 1998.

Catch MM/DD ^{a,b}	Fishing Effort		Chinook		Sockeye		Coho		Pink		Chum		Total	
	Permits	Landings	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
11-Jun ^c	1	1	0	0	2,583	13,230	0	0	0	0	0	0	2,583	13,230
12-Jun ^c	1	1	0	0	1,323	6,936	0	0	0	0	0	0	1,323	6,936
15-Jun ^c	1	1	0	0	2,158	11,031	0	0	0	0	0	0	2,158	11,031
18-Jun ^d	4	5	1	3	7,714	41,656	0	0	4	9	6	44	7,725	41,712
19-Jun ^c	1	1	0	0	1,947	10,578	0	0	0	0	0	0	1,947	10,578
23-Jun ^c	1	1	0	0	1,453	8,137	0	0	0	0	0	0	1,453	8,137
26-Jun ^c	1	1	21	450	2,910	16,128	0	0	0	0	0	0	2,931	16,578
29-Jun	77	77	115	2,307	25,969	149,700	3	19	812	2,227	590	4,260	27,489	158,513
30-Jun	75	76	131	2,390	20,808	118,054	12	77	2,889	7,983	827	6,251	24,667	134,755
1-Jul	68	68	198	3,684	13,124	74,836	1	8	302	806	402	3,126	14,027	82,460
2-Jul	55	56	97	1,693	13,674	79,424	9	72	1,004	2,913	772	5,043	15,556	89,145
3-Jul	70	74	139	2,280	17,487	105,016	49	316	854	2,310	6,395	45,129	24,924	155,051
4-Jul	66	69	89	1,418	16,155	95,839	147	999	1,873	5,387	9,512	68,033	27,776	171,676
5-Jul	68	71	133	2,424	13,249	78,970	93	590	1,031	2,862	799	5,752	15,305	90,598
6-Jul	71	74	215	4,354	20,434	124,865	185	1,184	1,877	5,471	1,172	8,461	23,883	144,335
7-Jul	72	73	160	2,507	20,442	124,564	218	1,483	2,478	6,357	1,243	9,148	24,541	144,059
8-Jul	75	78	124	2,193	21,066	133,273	153	1,062	1,909	5,176	943	6,779	24,195	148,483
9-Jul	72	74	102	1,567	24,223	157,455	214	1,479	3,030	8,595	1,261	8,335	28,830	177,431
10-Jul	77	80	128	1,988	33,324	213,977	432	3,101	5,423	14,911	1,310	9,819	40,617	243,796
11-Jul	72	84	94	1,490	30,613	195,444	395	2,805	6,741	20,147	1,111	8,236	38,954	228,122
12-Jul	6	6	0	0	1,151	7,259	3	28	28	91	3	26	1,185	7,404
13-Jul	76	77	190	2,739	37,442	235,302	4,269	31,434	18,759	53,770	2,226	16,141	62,886	339,386
14-Jul	77	81	196	3,132	41,533	264,744	5,763	39,896	16,035	47,754	2,536	18,121	66,063	373,647
15-Jul	71	74	63	1,136	39,752	257,798	1,576	11,303	6,057	21,209	1,167	8,942	48,615	300,388
16-Jul	74	91	95	1,328	62,509	401,265	3,771	27,501	23,753	71,430	4,147	29,205	94,275	530,729
17-Jul	26	26	77	568	5,106	32,585	134	980	1,324	4,428	83	703	6,724	39,264
18-Jul	73	73	101	1,646	38,181	246,660	745	5,501	10,193	31,026	1,033	7,594	50,253	292,427
19-Jul	74	80	85	1,237	50,391	325,430	1,002	7,195	7,545	25,086	1,318	9,835	60,341	368,783
20-Jul	71	76	36	741	40,548	257,003	662	5,000	7,498	26,877	859	6,316	49,603	295,937
21-Jul	76	77	36	575	47,425	302,054	2,696	20,314	17,836	54,783	2,283	15,612	70,276	393,338

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Table 3. (page 2 of 3)

	Catch MM/DD ^{a,b}	Permits	Landings	Chinook		Sockeye		Coho		Pink		Chum		Total	
				Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
14	22-Jul	70	74	74	1,020	31,021	192,518	2,826	21,474	21,316	63,083	2,621	18,014	57,858	296,109
	23-Jul	75	80	76	1,007	28,871	178,833	7,685	52,393	24,448	86,143	6,090	40,479	67,170	358,855
	25-Jul	77	79	37	562	32,123	195,094	436	3,158	16,789	59,469	1,178	9,171	50,563	267,454
	26-Jul	72	74	59	999	34,259	211,354	2,227	18,637	43,547	150,488	3,497	25,099	83,589	404,577
	27-Jul	69	77	129	1,438	32,913	201,618	3,947	30,046	57,442	193,879	4,279	31,469	98,710	458,450
	28-Jul	9	9	1	31	3,530	21,731	17	139	335	1,278	31	224	3,914	23,403
	29-Jul	19	19	3	23	5,331	31,548	28	217	727	2,658	45	335	6,134	34,781
	30-Jul	61	75	121	1,363	17,723	105,332	2,648	18,965	52,787	169,995	2,591	18,619	75,870	314,274
	31-Jul	65	65	82	906	19,171	115,256	4,202	30,738	62,350	208,613	3,642	26,064	89,447	381,577
	1-Aug	63	65	130	1,413	13,494	79,493	1,907	15,324	19,469	74,785	1,479	10,996	36,479	182,011
	3-Aug	67	70	59	664	13,391	78,240	3,522	27,061	41,013	138,911	3,026	21,260	61,011	266,136
	4-Aug	68	68	72	974	10,912	63,507	3,053	24,107	39,354	129,980	3,271	23,712	56,662	242,280
	5-Aug	53	55	69	709	6,024	34,018	3,878	26,399	25,427	103,013	3,267	22,500	38,665	186,639
	6-Aug	47	48	36	434	6,433	39,578	3,586	27,657	35,824	139,119	3,749	27,282	49,628	234,070
	7-Aug	30	30	17	173	3,020	16,217	1,016	8,151	10,009	28,362	1,022	7,394	15,084	60,297
	9-Aug	11	11	8	84	798	4,491	313	2,421	2,131	7,290	249	1,921	3,499	16,207
	10-Aug	55	55	101	1,373	9,761	57,184	4,507	35,265	40,232	122,837	5,716	40,808	60,317	257,467
	11-Aug	50	52	134	1,773	8,962	50,997	5,924	46,059	35,816	117,826	6,326	47,529	57,162	264,184
	12-Aug	46	47	128	1,627	9,710	56,694	6,590	51,687	38,872	128,959	6,849	48,813	62,149	287,780
	13-Aug	42	44	167	2,233	10,643	62,715	3,947	31,885	31,295	106,540	6,257	45,037	52,309	248,410
	14-Aug	30	30	16	289	4,663	24,999	1,090	9,493	3,639	13,281	1,616	11,758	11,024	59,820
	16-Aug	36	36	34	426	5,502	30,071	1,608	13,288	4,031	14,123	2,087	15,309	13,262	73,217
	17-Aug	40	42	16	237	5,683	31,000	3,186	25,158	9,515	32,601	3,371	23,321	21,771	112,317
	18-Aug	47	48	41	510	6,803	37,615	2,100	16,609	4,463	13,910	2,027	14,477	15,434	83,121
	19-Aug	31	31	35	535	5,360	28,975	2,057	17,202	4,068	10,807	1,860	12,294	13,380	69,813
	20-Aug	44	45	46	722	10,012	56,163	3,388	30,146	5,412	19,414	2,989	20,980	21,847	127,425
	21-Aug	23	23	4	51	1,118	6,223	350	3,119	316	1,212	240	1,673	2,028	12,278
	23-Aug	35	35	14	250	8,515	46,041	1,617	14,676	1,436	5,171	974	6,903	12,556	73,041
	24-Aug	31	31	38	515	5,160	27,239	2,222	19,920	1,467	5,024	934	6,656	9,821	59,354
	25-Aug	30	30	3	51	5,962	32,549	1,779	16,443	1,181	4,222	688	4,691	9,613	57,956
	26-Aug	31	32	3	42	4,081	22,117	1,484	14,137	730	2,653	669	4,724	6,967	43,673

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Table 3. (page 3 of 3)

Catch MM/DD ^{a,b}	Permits	Landings	Chinook		Sockeye		Coho		Pink		Chum		Total	
			Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
27-Aug	28	29	4	74	6,765	37,121	3,001	27,661	1,213	4,668	1,347	8,647	12,330	78,171
29-Aug	30	31	2	34	5,779	30,839	2,456	23,524	300	1,247	612	4,003	9,149	59,647
30-Aug	26	27	4	58	4,202	25,986	2,989	28,409	416	1,563	575	3,903	8,186	59,919
31-Aug	30	32	0	0	3,303	17,499	2,163	21,473	86	325	417	2,702	5,969	41,999
1-Sep	2	2	0	0	1,055	5,538	370	3,535	60	224	232	1,471	1,717	10,768
2-Sep	19	19	1	4	2,625	14,167	1,070	10,682	26	98	123	748	3,845	25,699
3-Sep	25	26	0	0	6,305	33,385	2,747	27,009	134	466	549	3,455	9,735	64,315
4-Sep	20	20	2	41	2,218	11,959	1,328	13,237	35	120	204	1,323	3,787	26,680
6-Sep	18	19	0	0	2,933	15,616	4,050	41,298	4	8	56	425	7,043	57,347
7-Sep	17	17	0	0	1,778	9,201	2,034	20,252	16	48	75	463	3,903	29,964
10-Sep	11	11	0	0	762	4,084	1,017	10,185	2	5	10	67	1,791	14,341
14-Sep	5	5	0	0	376	2,028	436	4,383	0	0	3	18	815	6,429
15-Sep	4	4	3	35	428	2,004	179	1,854	0	0	0	0	610	3,893
													0	0
Total	85	3,348	4,395	66,530	1,054,172	6,438,050	129,512	1,045,823	776,988	2,586,026	128,841	917,648	2,093,908	11,054,077
Average Weight				15.1		6.1		8.1		3.3		7.1		

^a Does not include salmon caught for personal use or for subsistence.

^b Does not include salmon caught at Cape Igvak or Southeastern District Mainland Destined to Chignik.

^c Includes catch from the department's test fishery within Chignik Lagoon.

^d Catch from the Chignik Seiners's Association Co-operative catches.

Table 4. Economic value of salmon and average income per commercial salmon permit holder, in dollars, in the Chignik Management Area, 1970-1998.

Date	Chinook		Sockeye		Coho		Pink		Chum		Total Value	Number Of Permits Fished (Active)	Total Value Per Permit
	Total	Average	Total	Average	Total	Average	Total	Average	Total	Average			
1970	6,129	89	2,190,272	31,743	18,397	267	635,673	9,213	376,025	5,450	3,226,496	69	46,761
1971	6,472	84	2,034,279	26,419	23,240	302	366,693	4,762	326,760	4,244	2,757,444	77	35,811
1972	2,028	28	825,498	11,308	35,699	489	48,401	663	87,759	1,202	999,385	79	12,650
1973	5,255	72	3,030,057	41,508	73,663	1,009	20,610	282	10,180	139	3,139,765	77	40,776
1974	2,941	32	3,618,781	39,767	31,933	351	64,069	704	51,125	562	3,768,849	94	40,094
1975	6,561	76	1,384,271	16,240	213,539	2,581	104,115	12,211	61,704	717	1,770,190	86	20,584
1976	13,800	179	4,751,000	61,701	138,000	1,792	568,300	7,381	183,600	2,384	5,654,700	77	73,438
1977	18,828	212	14,553,720	163,525	104,819	1,178	920,881	10,347	368,066	4,136	15,966,314	88	181,435
1978	56,700	597	15,653,500	164,774	116,400	1,225	1,131,500	11,911	404,500	4,258	17,362,600	95	182,764
1979	32,050	317	11,345,503	112,332	710,192	7,031	2,622,269	25,963	126,866	1,256	14,836,880	101	146,900
1980	67,657	670	5,532,290	54,775	520,655	5,155	1,477,060	14,624	1,061,963	10,514	8,659,625	101	85,739
1981	75,231	730	17,262,119	167,593	439,900	4,271	1,881,334	18,265	2,431,421	23,606	22,090,005	103	214,466
1982	75,276	717	13,038,510	124,176	1,782,027	16,972	578,184	5,506	1,356,597	12,920	16,830,594	105	160,291
1983	96,159	962	10,728,088	107,281	219,650	2,197	240,171	2,402	421,713	4,217	11,705,781	100	117,058
1984	114,502	1,134	20,402,076	202,000	759,972	7,525	330,916	3,276	146,024	1,446	21,753,490	101	215,381
1985	67,088	664	7,997,834	79,186	1,471,418	14,568	140,076	1,387	59,475	589	8,735,891	101	86,494
1986	84,800	848	16,882,290	168,823	667,740	6,677	356,147	3,562	456,546	4,565	18,447,523	100	184,475
1987	72,739	706	24,783,033	240,612	1,035,129	10,050	269,868	2,620	339,819	3,299	26,500,588	102	259,810
1988	286,740	2,811	14,350,354	140,690	4,153,424	40,720	6,771,266	66,385	2,189,293	21,464	27,751,077	102	272,069
1989 ^a	78,999	790	13,047,378	130,474	436,892	4,369	32,994	3,299	4,745	47	13,601,008	100	136,010
1990	185,256	1,834	22,509,923	222,871	700,309	6,934	502,693	4,977	878,510	8,698	24,776,691	101	245,314
1991	50,027	486	11,002,784	106,823	650,626	6,317	402,916	3,912	502,860	4,882	12,609,213	101	124,844
1992	193,326	1,858	12,552,025	120,693	1,323,107	12,722	811,882	7,807	414,005	3,981	15,294,345	101	151,429
1993	175,690	1,722	8,210,106	80,491	730,622	7,163	637,666	6,252	184,012	1,804	9,938,096	102	97,432
1994	38,096	385	10,046,245	101,477	1,094,415	11,055	226,504	2,208	430,888	4,352	11,836,148	99	119,557

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Table 4. (page 2 of 2)

Date	Chinook		Sockeye		Coho		Pink		Chum		Total Value	Number Of Permits Fished (Active)	Total Value Per Permit
	Total	Average	Total	Average	Total	Average	Total	Average	Total	Average			
1995	60,174	602	11,969,210	119,692	834,337	8,343	977,811	9,778	634,780	6,348	14,476,312	100	144,763
1996	25,041	250	12,640,560	126,406	447,228	4,472	24,827	248	32,279	323	13,169,935	100	131,699
1997	20,642	211	4,860,589	49,598	453,905	4,632	348,042	3,551	239,400	2,443	5,922,577	98	60,434
1998	31,934	376	6,631,192	78,014	397,413	4,675	310,323	3,651	137,647	1,619	7,508,509	85	88,335
Averages													
1989-98	85,919	851	11,347,001	113,654	706,885	7,068	427,566	4,568	345,913	3,450	12,913,283	99	129,982
1979-88	104,466	1,027	14,552,955	142,793	1,227,768	12,015	1,338,336	13,114	940,317	9,180	18,052,730	102	177,309

17 ^a Exxon Valdez Oil Spill

Table 5. Chignik River chinook salmon escapement, Chignik Management Area catch, and total run, 1960-1998.

Year	Escapement ^a	Catch ^b	Total Run
1960	-	643	643
1961	-	409	409
1962	-	435	435
1963	564	1,744	2,308
1964	914	1,099	2,013
1965	942	1,592	2,534
1966	822	636	1,458
1967	1,500	882	2,382
1968	1,000	674	1,674
1969	600	3,448	4,048
1970	2,500	1,226	3,726
1971	2,000	2,010	4,010
1972	1,500	464	1,964
1973	822	525	1,347
1974	672	255	927
1975	877	549	1,426
1976	700	2,290	2,990
1977	798	710	1,508
1978	1,197	1,603	2,800
1979	1,050	1,253	2,303
1980	876	2,344	3,220
1981	1,603	2,694	4,297
1982	2,412	5,236	7,648
1983	1,943	5,488	7,431
1984	5,806	4,318	10,124
1985	3,144	1,888	5,032
1986	3,612	3,037	6,649
1987	2,624	2,651	5,275
1988	4,868	7,296	12,164
1989	3,316	3,542	6,858
1990	4,364	9,901	14,265
1991	4,531	3,157	7,702
1992	3,806	10,832	14,638
1993	1,946	19,515	21,461
1994	2,963	3,919	6,935
1995	4,288	5,261	9,549
1996	3,488	3,105	6,593
1997	3,032	3,824	6,856
1998	3,075	4,395	7,470
Avg (1969-78)	1,167	1,308	2,475
Avg (1979-88)	2,794	3,621	6,414
Avg (1989-98)	3,481	6,745	10,233

^a No escapement adjustments are made for chinook salmon that spawn below the weir, or those removed by the sport fishery

^b Does not include chinook salmon utilized for personal use or listed on a subsistence permit.

Table 6. Estimated salmon escapement by district and statistical area in the Chignik Management Area, 1998.

District	StatArea	Chinook	Sockeye ^a	Coho ^b	Pink ^c	Chum	Total
Chignik Bay	27110	3,075	702,628	27,831	24,407	4,458	762,399
	Total	3,075	702,628	27,831	24,407	4,458	762,399
Central	27220	0	0	0	53,103	593	80,916
	27230	0	0	0	52,733	500	80,463
	27250	0	0	0	105,077	30,889	163,216
	Total	0	0	0	210,913	31,982	242,895
Eastern	27260	0	500	2,200	254,867	72,300	357,127
	27270	0	0	10,300	237,033	600	275,203
	27272	0	0	0	83,500	3,813	114,585
	27280	0	0	0	247,450	12,933	287,663
	27290	0	0	0	233,600	0	260,890
	27292	0	0	0	70,667	1,000	98,959
	27296	0	700	150	146,053	7,050	181,249
	Total	0	1,200	12,650	1,273,170	97,696	1,384,716
Western	27370	0	0	10,300	31,200	600	69,470
	27372	0	0	0	96,843	3,813	128,028
	27380	0	0	0	6,330	200	33,910
	27382	0	0	0	1,076	125	28,583
	27384	0	0	0	0	25,317	52,701
	27394	0	0	0	15,000	500	42,894
	Total	0	0	10,300	150,449	30,555	191,304
Perryville	27540	0	0	42,600	163,740	212,736	446,616
	27550	0	0	50	50,400	1,500	79,500
	27560 ^d	0	40	148	8,700	225	36,500
	Total	0	0	42,798	222,840	214,461	479,966
All District Total		3,075	703,828	93,579	1,881,779	379,152	3,061,280

^aIncludes sockeye salmon from Chignik weir counts, aerial surveys, and post weir estimates from methods of Reggarone (1989).

^bCoho escapement estimates were from Chignik River weir counts, aerial surveys, and methods from Reggarone (1989). Coho aerial surveys were incomplete because of budget constraints.

^cEscapement estimates for pink and chum were based on Chignik River weir counts, aerial surveys, and area under the curve methods developed by Johnson and Barrett (1988).

^dA October 23 foot survey in Kametlook River showed 74 actual coho expanded to 148 and actual 40 sockeye salmon. These data were included in the above table.

Table 7. Commercial salmon catches by district in the Chignik Management Area, 1989-1998.

Year	Permits	Lndgs	Chinook		Sockeye		Coho		Pink		Chum		Total Salmon	
			Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Chignik Bay														
1989	96	3,155	3,532	76,491	1,156,782	7,950,548	68,231	559,127	27,691	94,218	1,587	11,546	1,257,823	8,691,930
1990	96	3,936	3,719	80,915	1,400,069	9,374,800	61,260	497,901	94,528	319,928	11,460	77,739	1,571,036	10,351,283
1991	98	2,692	1,996	47,206	1,487,421	10,196,187	56,574	481,741	76,163	231,960	17,545	115,553	1,639,699	11,072,647
1992	91	2,480	3,181	67,840	792,889	5,177,003	80,946	676,752	178,105	729,324	12,711	79,207	1,067,832	6,730,126
1993	91	2,409	5,240	85,848	762,730	4,675,799	48,808	349,816	55,909	174,334	8,116	44,235	880,803	5,330,032
1994	88	2,334	1,808	36,773	908,042	5,696,656	70,541	669,451	59,425	261,622	25,250	174,189	1,065,066	6,838,691
1995	82	3,188	3,008	76,580	1,083,707	7,335,791	54,646	460,937	106,939	416,116	14,588	114,029	1,262,888	8,403,453
1996	84	2,975	1,579	38,326	1,003,683	7,915,161	45,361	416,985	1,523	5,861	639	5,140	1,052,785	8,381,473
1997	72	2,022	1,296	25,997	406,763	2,579,448	32,847	298,021	39,461	132,576	20,978	152,039	501,345	3,188,081
1998	67	2,090	1,721	31,397	621,868	3,751,669	23,063	223,668	26,054	100,971	7,352	55,053	680,058	4,162,758
Average	87	2,728	2,708	56,737	962,395	6,465,306	54,228	463,440	66,580	246,691	12,023	82,873	1,097,934	7,315,047
Central														
1989	19	27	9	177	2,473	18,484	2	13	21	51	34	317	2,539	19,042
1990	68	1,154	2,175	25,400	566,601	3,677,314	27,659	196,601	233,677	706,731	113,741	796,667	943,853	5,402,713
1991	64	610	775	13,372	315,570	2,146,202	9,294	63,554	173,967	508,685	51,429	347,662	551,035	3,079,475
1992	73	815	2,010	28,789	332,860	2,209,867	19,612	149,633	205,750	787,925	45,569	337,536	605,801	3,513,750
1993	73	961	6,865	70,435	557,020	3,371,664	36,421	215,825	205,037	620,946	43,308	260,713	848,649	4,539,583
1994	65	897	1,303	22,662	573,484	3,586,448	19,794	175,294	99,149	321,930	69,552	507,601	763,282	4,613,935
1995	60	1,300	831	15,364	415,436	2,728,432	46,975	345,558	469,745	1,784,645	107,061	813,357	1,040,048	5,687,356
1996	55	1,254	993	16,662	743,618	5,577,898	35,420	275,002	15,756	47,580	26,125	231,935	821,912	6,149,077
1997	61	1,195	1,609	19,513	294,753	1,869,413	45,778	365,655	600,865	1,974,086	104,201	805,509	1,047,206	5,034,176
1998	48	874	1,786	23,041	286,513	1,784,730	32,723	266,377	233,732	794,480	43,036	317,314	597,790	3,185,942
Average	59	909	1,836	23,542	408,833	2,697,045	27,368	205,351	223,770	754,706	60,405	441,861	722,212	4,122,505
Eastern														
1989	1	1	1	30	32	248	0	0	0	0	3	25	36	303
1990	27	65	175	2,581	51,443	267,222	32	273	40,574	127,087	27,463	221,547	119,687	618,710
1991	19	100	165	3,184	59,751	404,670	1,187	7,754	27,979	80,933	4,925	34,620	94,007	531,161
1992	36	132	181	2,658	12,327	80,234	4,260	31,399	183,119	696,760	61,209	473,409	261,096	1,284,460
1993	33	177	2,568	29,319	186,364	1,045,106	4,240	25,172	52,755	151,960	21,157	131,290	267,084	1,382,847
1994	20	27	43	827	20,041	120,797	176	1,680	12,952	46,055	4,333	30,180	37,545	199,539

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Table 7. (page 2 of 2)

Year	Permits	Lndgs	Chinook		Sockeye		Coho		Pink		Chum		Total	Salmon
			Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1995	24	69	108	2,029	48,842	305,438	458	2,928	8,572	30,480	8,074	62,909	66,054	403,784
1996	25	93	263	4,297	145,668	992,367	33	201	7,181	16,673	19,748	161,759	172,893	1,175,297
1997	26	60	60	947	20,650	128,173	1,801	13,422	72,347	250,575	11,397	90,425	106,255	483,542
1998	15	75	79	1,221	30,555	182,004	1,227	10,174	66,725	208,368	5,180	34,511	103,766	436,278
Average	23	80	364	4,709	57,567	352,626	1,341	9,300	47,220	160,889	16,349	124,068	122,842	651,592
Western														
1989	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	66	194	3,190	20,521	53,192	349,095	23,422	145,578	135,810	395,918	91,603	510,487	307,217	1,421,599
1991	55	307	197	2,559	19,766	118,705	57,373	381,255	419,264	1,200,785	98,603	621,600	595,203	2,324,904
1992	67	440	4,300	28,288	30,004	180,810	140,560	1,053,242	628,900	2,327,067	65,466	440,523	869,230	4,029,930
1993	78	399	3,113	28,824	54,051	315,376	84,056	516,876	685,605	2,183,128	25,045	145,621	851,870	3,189,825
1994	66	323	452	6,659	64,325	401,035	110,476	890,333	174,641	586,191	94,116	665,538	444,010	2,549,756
1995	56	325	890	10,839	79,874	515,329	87,819	599,514	791,718	2,708,667	158,273	1,152,340	1,118,574	4,986,689
1996	29	168	162	2,146	47,529	304,887	91,587	652,534	100,871	292,562	36,303	252,031	276,452	1,504,160
1997	40	92	60	695	44,768	267,536	9,139	68,085	118,003	379,052	16,280	124,140	188,250	839,508
1998	26	213	555	6,740	87,940	553,623	55,359	421,808	343,187	1,071,003	41,425	291,724	528,466	2,344,898
Average	48	246	1,292	10,727	48,145	300,640	65,979	472,923	339,800	1,114,437	62,711	420,400	517,927	2,319,127
Perryville														
1989	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	27	56	642	4,848	22,345	141,338	17,758	93,392	45,419	125,980	25,737	150,579	111,901	516,137
1991	27	147	24	382	13,157	78,688	41,197	248,653	471,875	1,335,268	88,594	556,764	614,847	2,219,755
1992	57	305	1,160	10,515	109,369	724,988	65,565	451,665	358,199	1,258,083	37,179	261,651	571,472	2,706,902
1993	45	295	1,729	19,827	137,186	854,687	55,934	353,555	649,071	2,183,429	24,736	154,188	868,656	3,565,686
1994	30	127	313	4,944	53,081	340,899	36,217	260,068	84,896	278,861	34,025	253,503	208,532	1,138,275
1995	25	230	424	6,375	96,186	637,331	90,707	653,149	681,024	2,410,478	92,953	672,352	961,294	4,379,685
1996	14	75	108	1,172	17,855	112,432	20,825	141,225	58,475	173,542	16,976	128,975	114,239	557,346
1997	12	18	7	72	2,749	16,019	1,343	11,326	13,755	48,044	3,049	24,886	20,903	100,347
1998	20	96	254	4,131	27,296	166,024	17,140	123,796	107,290	411,204	31,848	219,046	183,828	924,201
Average	26	135	466	5,227	47,922	307,241	34,669	233,683	247,000	822,489	35,510	242,194	365,567	1,610,833

Table 8. Harvest of Chignik bound sockeye salmon in the Chignik, Cape Igvak, and Southeastern District Mainland Areas from 1964-1998.

Year	Chignik Area		Cape Igvak ^a		Mainland Area ^a		Total All Areas
	Catch	Percent	Catch	Percent	Catch	Percent	
1964 ^b	556,890	90.57	14,980	2.44	43,021	7.00	614,891
1965	599,553	89.94	11,021	1.65	56,020	8.40	666,594
1966	219,794	87.99	18,003	7.21	12,011	4.81	249,808
1967	462,000	91.48	23,014	4.56	20,021	3.96	505,035
1968	977,382	82.53	135,951	11.48	70,959	5.99	1,184,292
1969	394,135	78.96	97,982	19.63	7,013	1.41	499,130
1970 ^c	1,325,734	72.51	434,394	23.76	68,181	3.73	1,828,309
1971	1,016,136	80.33	197,614	15.62	51,272	4.05	1,265,022
1972	378,218	87.99	33,865	7.88	17,752	4.13	429,835

1964-72 catch and percentage figures are total for the entire season. Catch figures and percentages after 1972 are only through July 25.

1973 ^d	769,258	88.97	57,348	6.63	37,983	4.39	864,589
1974	530,278	73.61	122,071	16.95	68,029	9.44	720,378
1975	115,984	81.78	23,635	16.67	2,205	1.55	141,824
1976	792,024	82.96	117,926	12.35	44,730	4.69	954,680
1977	1,547,285	90.40	128,852	7.53	35,502	2.07	1,711,639
1978 ^{e,f}	1,454,389	85.38	227,014	13.33	22,064	1.30	1,703,467
1979 ^g	794,504	91.81	13,950	1.61	56,878	6.57	865,332
1980	670,001	91.31	32	0.00	63,724	8.68	733,757
1981	1,606,300	79.85	282,727	14.06	122,533	6.09	2,011,560
1982	1,250,768	84.46	167,401	11.30	62,767	4.24	1,480,936
1983	1,450,832	72.68	318,048	15.93	227,392	11.39	1,996,272
1984	2,474,405	73.93	449,372	13.43	423,068	12.64	3,346,845
1985 ^h	696,169	79.91	123,627	14.19	51,421	5.60	871,217
1986	1,456,729	82.64	188,017	10.67	118,006	6.69	1,762,752
1987	1,659,615	77.99	321,506	15.11	146,886	6.90	2,128,007
1988	675,487	95.67	11,218	1.59	19,320	2.74	706,025
1989	496,044	99.10	0	0.00	4,485	0.90	500,529
1990	1,205,575	83.61	107,706	7.47	128,599	8.92	1,441,880
1991 ⁱ	1,958,954	80.42	324,329	13.31	152,714	6.27	2,435,997
1992 ^j	1,054,309	81.07	152,358	11.72	93,845	7.22	1,300,512
1993	1,495,098	77.72	300,055	15.60	128,536	6.68	1,923,689
1994 ^k	1,632,435	80.61	250,230	12.36	142,350	7.03	2,025,015
1995	1,024,785	79.90	169,530	13.22	88,302	6.88	1,282,617
1996 ^l	1,710,249	79.70	308,327	14.37	127,201	5.93	2,145,777
1997	443,892	100.00	0	0.00	0	0.00	443,892
1998 ^{m,n}	786,466	91.22	8,813	1.02	66,893	7.76	862,172

^a The Cape Igvak and Southeastern District Mainland (SEDM) figures represent 80% of the total sockeye catches for those areas as it is estimated that roughly 80% of the sockeye caught in the Cape Igvak section and Southeastern District Mainland Area (excluding sockeye caught in Northwest Stepovak Section from 1964-1991 and in Orzinski bay in 1992 are destined for Chignik.

Table 8. (page 2 of 2)

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- ^b The data from 1964-1972 are based on total yearly catches. Prior to 1973, Cape Igvak and Southeastern District Mainland fisheries were set by regulation to weekly fishing periods, usually 5 days per week. Time modifications were implemented when poor escapements occurred at Chignik.
 - ^c Catches (1970-1992) were updated using historical electronic fish ticket databases.
 - ^d During 1974 through 1977 all three fisheries were managed on a day by day basis.
 - ^e Beginning in 1978, the Cape Igvak Fishery Management Plan allocated 15 percent of the total sockeye catch destined for Chignik.
 - ^f During 1978, seining prior to July 11 was disallowed in the Southeast District Mainland. The set gillnet fishery was allowed to fish 3 days per week through July 10 after which the fishery was managed on the basis of local stocks.
 - ^g During 1979-1984 and prior to July 11, fishing was allowed 5 days per week in the Southeast District Mainland Area with a ceiling of an estimated 60,000 sockeye destined for Chignik. If the Chignik Area sockeye catch was 1,000,000 or more before July 11, the 60,000 ceiling was to be dropped.
 - ^h Beginning in 1985, Southeast District Mainland Area (excluding the Northwest Stepovak Section from 1964-1991 and Orzinski Bay statistical area) was placed on an allocation of 6.2 percent of the total estimated Chignik sockeye catch through July 25. After July 25, the Southeast District Mainland is managed on a local stock basis. The allocation changed to 6.0 percent beginning in 1988. Seining is still not allowed prior to July 11.
 - ⁱ Includes overescapement of 278,305 sockeye counted past the weir during the Chignik Area seiners' boycott (Jun 23-Jul 4).
 - ^j Review of Orzinski Lake historical and current escapement records led the Alaska Board of Fisheries to redefine the Southeastern District Mainland Management Plan. Beginning in 1992, the Southeastern District Mainland fishery (excluding Orzinski Bay) was placed on an allocation of 7.0 percent of the total estimated Chignik sockeye catch through July 25.
 - ^k Includes overescapement of 208,921 sockeye counted past the weir during the Chignik Area seiners' strike (Jun 22-Jun 25).
 - ^l During their January 1996 meeting, the BOF increased the area to be managed for local Orzinski Lake sockeye salmon from only Orzinski Bay to the entire Northwest Stepovak Section. Prior to July 1, the entire Northwest Stepovak Section will be managed on an allocation based on the strength of the Chignik sockeye salmon runs. Beginning July 1, the Northwest Stepovak Section will be managed entirely on local stocks. The BOF also decreased the percentage of sockeye salmon allocated to the SEDM fishery from 7% to 6% to attempt to maintain traditional harvest levels of Chignik bound sockeye salmon in the SEDM fishery.
 - ^m During their January 1998 meeting, the BOF reduced the area managed entirely for local Orzinski Lake sockeye salmon from the entire Northwest Stepovak Section to only Orzinski Bay. All sockeye salmon caught in the Northwest Stepovak Section beginning July 1 will still be considered 100% local fish and not counted toward the 6% allocation. Remainder of SEDM sockeye salmon harvest allocated as 80% Chignik bound fish. Assures minimum harvest of 600,000 sockeye salmon in Chignik through July 25.
 - ⁿ Includes overescapement of 52,131 sockeye salmon escapement counted past the weir during the Chignik Area seiners' strike (Jun 16-June 28) and strike fund catches of 7,714 fish harvested on June 18.

Table 9. Total Chignik Management Area and 80 percent of the sockeye salmon harvest in the Cape Igvak and Southeastern District Mainland Areas through July 25 and season's total for each area, 1964-1998.

Year	Harvest to July 25 Only ^a				Harvest for Entire Season ^a			
	Chignik	Igvak	Mainland	Total	Chignik	Igvak	Mainland	Total
1964	-	-	-	-	556,890	14,980	43,021	614,891
1965	-	-	-	-	599,553	11,021	56,020	666,594
1966	-	-	-	-	219,794	18,003	12,011	249,808
1967	-	-	-	-	462,000	23,014	20,021	505,035
1968	-	-	-	-	977,382	135,951	70,959	1,184,292
1969	-	-	-	-	394,135	97,982	7,013	499,130
1970	-	-	-	-	1,325,734	434,394	68,181	1,828,309
1971	-	-	-	-	1,016,136	197,614	51,272	1,265,022
1972	-	-	-	-	378,218	33,865	17,752	429,835
1973	769,258	57,348	37,983	864,589	870,354	57,348	38,635	966,337
1974	530,278	122,071	68,029	720,378	662,905	122,071	68,980	853,956
1975	115,984	23,635	2,205	141,824	399,593	23,635	2,205	425,433
1976	792,024	117,926	44,730	954,680	1,163,728	117,978	46,155	1,327,861
1977	1,547,285	128,852	35,502	1,711,639	1,972,207	128,852	39,405	2,140,464
1978	1,454,389	227,014	22,064	1,703,467	1,576,283	227,052	24,102	1,827,437
1979	794,504	13,950	56,878	865,332	1,049,497	20,436	83,837	1,153,770
1980	670,001	32	63,724	733,757	859,966	631	88,752	949,349
1981	1,606,300	282,727	122,533	2,011,560	1,839,469	284,211	167,357	2,291,037
1982	1,250,768	167,401	62,767	1,480,936	1,521,686	168,295	86,886	1,776,867
1983	1,450,832	318,048	227,392	1,996,272	1,824,175	323,004	297,429	2,444,608
1984	2,474,405	449,372	423,068	3,346,845	2,660,619	450,066	487,938	3,598,623
1985	696,169	123,627	51,421	871,217	922,151	125,134	93,206	1,140,491
1986	1,456,729	188,017	118,006	1,762,752	1,645,834	188,129	147,056	1,981,019
1987	1,659,615	321,506	146,886	2,128,007	1,898,538	344,117	188,983	2,431,638
1988	675,487	11,218	19,320	706,025	792,416	28,783	79,101	900,300
1989	496,044	0	4,485	500,529	1,152,854	0	138,594	1,291,448
1990	1,205,575	107,706	128,599	1,441,880	2,088,128	133,821	216,944	2,438,893
1991 ^b	1,958,954	324,329	152,714	2,435,997	2,165,864	341,869	228,934	2,736,667
1992	1,054,309	152,358	93,845	1,300,512	1,265,026	156,318	177,715	1,599,059
1993	1,495,098	300,055	128,536	1,923,689	1,691,907	329,907	222,591	2,244,405
1994 ^c	1,632,435	250,230	142,350	2,025,015	1,818,755	257,827	226,562	2,303,144
1995	1,024,785	169,530	88,302	1,282,617	1,715,022	197,697	270,589	2,183,308
1996	1,710,249	308,327	127,201	2,018,576	1,954,036	309,543	183,321	2,446,900
1997	443,892	0	0	443,892	769,683	300	73,113	843,096
1998 ^d	786,466	8,813	66,893	862,172	1,114,017	8,845	177,546	1,300,408

^a Catches (1970-1996) were updated using historical electronic fish ticket databases.

Data does not include test fishery catches. The criteria established by the Board of Fisheries to allocate Chignik bound sockeye salmon at Cape Igvak and Southeastern District Mainland each year through July 25 was extrapolated from July 26 through the end of each year's fishing season to estimate total catch of Chignik bound salmon.

^b Includes overescapement of 278,305 sockeye salmon counted past the weir during the Chignik Seiners' Association boycott (June 23-July 4).

^c Includes overescapement of 208,921 sockeye salmon counted past the weir during the Chignik Seiners' Association strike (June 22-June 25).

^d Includes overescapement of 52,131 sockeye salmon counted past the weir to June 28 during the Chignik Seiners Association strike and 7,714 fish caught for a strike fund by the Chignik Seiners' Association June 18.

Table 10. Age composition from Chignik Lagoon sockeye salmon test and commercial fishery scales samples, 1998.

Date	Total (n)	Age Composition												
		0.2	0.4	1.1	1.2	1.3	1.4	2.1	2.2	2.3	2.4	3.2	3.3	3.4
11-Jun	515	0.8	0.0	0.0	21.4	36.3	0.2	0.0	21.2	19.8	0.0	0.2	0.2	0.0
15-Jun	489	0.6	0.0	0.2	20.9	33.3	0.2	0.0	18.8	25.4	0.0	0.0	0.6	0.0
18-Jun	501	0.0	0.0	0.0	15.0	39.9	0.2	0.0	15.4	29.1	0.0	0.0	0.4	0.0
23-Jun	510	0.4	0.0	0.2	17.3	36.3	0.2	0.0	18.2	26.7	0.2	0.2	0.4	0.0
26-Jun	512	0.0	0.2	0.2	15.6	36.3	0.0	0.4	18.8	27.7	0.0	0.4	0.4	0.0
29-Jun	508	0.4	0.0	0.4	13.8	37.0	0.4	0.6	12.0	34.1	0.0	0.2	1.2	0.0
3-Jul	483	0.0	0.0	0.2	11.8	30.4	0.6	0.2	14.3	40.2	0.0	1.2	1.0	0.0
6-Jul	514	0.0	0.0	0.2	8.0	19.5	0.0	0.0	12.1	59.7	0.0	0.4	0.2	0.0
9-Jul	343	0.0	0.0	0.0	4.7	12.5	0.6	0.0	10.5	69.7	0.0	2.0	0.0	0.0
13-Jul	496	0.0	0.0	0.0	4.2	12.1	0.0	0.0	12.5	68.5	0.2	2.2	0.2	0.0
20-Jul	485	0.0	0.0	0.6	4.1	7.6	0.2	0.6	22.3	59.0	0.2	4.9	0.4	0.0
26-Jul	501	0.0	0.0	0.0	3.4	11.6	0.0	0.0	24.4	55.9	0.2	4.4	0.2	0.0
31-Jul	511	0.0	0.0	0.0	3.3	8.8	0.0	0.4	30.9	49.3	0.4	6.1	0.6	0.2
11-Aug	316	0.0	0.0	0.0	1.9	5.4	0.3	0.9	49.7	33.2	0.9	7.6	0.0	0.0
13-Aug	485	0.0	0.0	0.0	1.4	6.8	0.2	1.9	45.2	31.3	1.4	11.3	0.4	0.0
17-Aug	492	0.0	0.0	0.0	2.0	5.7	0.0	0.4	53.5	24.4	0.4	13.2	0.4	0.0
20-Aug	496	0.0	0.0	0.0	1.0	4.6	0.0	4.6	52.0	26.4	0.2	11.1	0.0	0.0
26-Aug	465	0.0	0.0	0.2	3.0	1.9	0.6	1.5	55.9	22.8	1.9	11.6	0.4	0.0
31-Aug	467	0.0	0.0	0.0	3.2	2.4	1.1	2.6	55.0	21.8	2.1	11.1	0.6	0.0
Total	9,089	0.1	0.0	0.1	8.5	18.9	0.2	0.7	28.2	37.8	0.4	4.5	0.4	0.0

^a Scale samples are from the test fishery.

Table 11. Sockeye salmon escapement, catch, and total run for the Black Lake, Chignik Lake, and combined runs, based on postseason scale pattern analysis, 1954-1998.

Escapement and Catch ^{a,b,c}									
	Black Lake			Chignik Lake			Combined		
Year	Escapement	Catch	Total	Escapement	Catch	Total	Escapement	Catch	Total
1954	184,953	72,334	257,287	277,912	19,232	297,144	462,865	91,566	554,431
1955	256,757	179,539	436,296	201,409	168,987	370,396	458,166	348,526	806,692
1956	289,096	246,442	535,538	483,024	421,251	904,275	772,120	667,693	1,439,813
1957	192,479	77,423	269,902	328,779	224,757	553,536	521,258	302,180	823,438
1958	120,882	141,180	262,042	212,594	179,949	392,543	333,458	321,129	654,585
1959	112,226	185,000	277,226	308,845	251,547	560,192	420,871	416,547	837,418
1960	251,567	274,048	525,615	357,230	418,356	775,586	608,797	692,404	1,301,201
1961	140,714	53,852	194,566	254,970	278,609	533,579	395,684	332,461	728,145
1962	167,802	71,562	239,164	324,860	292,528	617,388	492,462	364,090	856,552
1963	332,536	80,258	412,794	200,314	323,080	523,394	532,850	403,338	936,188
1964	137,073	142,380	279,453	166,625	472,510	639,135	303,698	614,890	918,588
1965	307,192	497,018	804,210	163,151	169,576	332,727	470,343	666,594	1,136,937
1966	383,545	87,169	470,714	183,625	182,638	346,163	567,070	249,807	816,877
1967	328,000	154,134	482,134	189,000	350,901	539,901	517,000	505,035	1,022,035
1968	342,343	542,598	884,941	244,836	641,693	886,529	587,179	1,184,291	1,771,470
1969	368,589	263,170	629,759	132,055	235,960	368,015	498,644	499,130	997,774
1970	536,257	1,666,065	2,102,322	119,952	262,244	382,196	656,209	1,828,309	2,484,518
1971	671,688	555,832	1,227,500	232,501	709,190	941,691	904,169	1,265,022	2,169,191
1972	326,320	43,220	369,540	231,270	386,615	617,885	557,590	429,835	987,425
1973	533,047	569,854	1,102,901	247,144	396,114	643,258	780,191	965,968	1,746,159
1974	351,701	174,883	526,584	364,612	675,607	1,040,219	716,313	850,490	1,566,803
1975	308,914	4,019	312,933	314,084	421,414	735,498	622,998	425,433	1,048,431
1976	551,254	548,107	1,099,361	341,828	778,380	1,120,208	893,082	1,326,487	2,219,569
1977	482,247	439,693	921,940	483,561	1,896,767	2,160,328	945,808	2,136,460	3,082,268
1978	458,660	1,070,487	1,529,147	263,009	754,838	1,017,847	721,669	1,825,325	2,546,994
1979	385,694	207,122	592,816	317,889	944,964	1,262,853	703,583	1,152,086	1,855,669
1980	311,332	170,629	481,961	279,729	778,014	1,057,743	591,061	948,643	1,539,704
1981	438,540	779,755	1,218,295	301,092	1,509,959	1,811,051	739,632	2,289,714	3,029,346
1982	616,117	1,325,041	1,941,158	305,193	451,789	756,982	921,310	1,776,830	2,698,140
1983	426,177	977,548	1,403,725	441,561	1,467,060	1,908,621	867,738	2,444,808	3,312,546
1984	597,712	3,245,482	3,843,194	268,496	353,141	621,637	866,208	3,598,623	4,464,831
1985	377,516	850,340	1,027,856	369,262	490,151	859,413	746,778	1,140,491	1,887,269
1986	566,088	1,371,935	1,938,023	207,231	609,084	816,315	773,319	1,981,019	2,754,338
1987	589,291	1,949,867	2,539,158	214,452	482,311	696,763	803,743	2,432,178	3,235,921
1988	420,577	272,553	693,130	255,180	631,172	886,352	675,757	903,725	1,579,482
1989	384,004	234,839	618,843	557,171	1,063,042	1,620,213	941,175	1,297,881	2,239,056
1990	434,543	587,818	1,022,361	335,867	1,856,597	2,192,464	770,410	2,444,415	3,214,825
1991	657,511	1,714,835	2,372,346	382,587	751,291	1,133,878	1,040,098	2,466,126	3,506,224
1992	360,681	747,829	1,108,510	405,922	863,651	1,269,573	766,603	1,611,480	2,378,083
1993	364,263	926,863	1,291,126	333,114	1,322,984	1,656,098	697,377	2,249,847	2,947,224
1994	769,464	1,595,256	2,364,720	197,445	508,109	705,554	966,909	2,103,365	3,070,274
1995	366,163	660,282	1,026,445	373,757	1,522,406	1,896,163	739,920	2,182,688	2,922,608
1996	464,750	1,705,842	2,170,592	284,387	745,575	1,029,962	749,137	2,451,217	3,200,354
1997	396,688	234,612	631,280	378,950	608,484	987,434	775,618	843,096	1,618,714
1998	410,659	313,423	724,082	290,469	927,137	1,217,606	701,128	1,240,563	1,941,691
Average									
89-98	460,871	872,140	1,333,011	353,967	1,016,928	1,370,895	814,838	1,889,068	2,703,905
79-88	472,904	1,085,027	1,557,932	296,009	771,765	1,067,773	768,913	1,866,792	2,635,705
69-78	458,666	523,533	982,199	271,002	631,713	902,715	729,667	1,155,246	1,884,913

^aThe criteria established by the Board of Fisheries to allocate Chignik bound salmon at Cape Igvak and Southeastern District Mainland each year through July 25 was extrapolated from July 26 through the end of each year's fishing season to estimate total catch of Chignik bound salmon. Limited tagging data was initially used to establish the 80 percent harvest rate of Chignik bound sockeye salmon and extrapolation of this data to the entire season is based on these same studies. Therefore, caution should be used in interpreting any of these estimates.

^bDoes not include personal use or other subsistence fish.

^cIncludes salmon from test or cooperative fisheries but not from personal use or subsistence.

Table 12. Sockeye salmon daily and cumulative escapement estimates through the Chignik River weir by day, 1998.

Date	Escapement		Date	Escapement	
	Daily	Cumulative		Daily	Cumulative
May-24	0	0	Jul-8	900	485,318
May-25	44	44	Jul-9	1,298	486,616
May-26	12	56	Jul-10	1,382	487,998
May-27	46	102	Jul-11	1,584	489,582
May-28	36	138	Jul-12	2,364	491,946
May-29	35	173	Jul-13	10,251	502,197
May-30	986	1,159	Jul-14	12,196	514,393
May-31	785	1,944	Jul-15	2,602	516,995
Jun-1	881	2,825	Jul-16	1,674	518,669
Jun-2	698	3,523	Jul-17	5,069	523,738
Jun-3	1,053	4,576	Jul-18	7,057	530,795
Jun-4	1,146	5,722	Jul-19	5,389	536,184
Jun-5	1,548	7,270	Jul-20	2,763	538,947
Jun-6	2,763	10,033	Jul-21	2,999	541,946
Jun-7	597	10,630	Jul-22	1,741	543,687
Jun-8	1,872	12,502	Jul-23	1,222	544,909
Jun-9	4,943	17,445	Jul-24	9,099	554,008
Jun-10	11,425	28,870	Jul-25	20,232	574,240
Jun-11	13,890	42,760	Jul-26	4,463	578,703
Jun-12	13,583	56,343	Jul-27	2,182	580,885
Jun-13	4,165	60,508	Jul-28	3,228	584,113
Jun-14	22,518	83,026	Jul-29	12,014	596,127
Jun-15	25,714	108,740	Jul-30	10,058	606,185
Jun-16	30,498	139,238	Jul-31	4,072	610,257
Jun-17	25,877	165,115	Aug-1	1,578	611,835
Jun-18	19,974	185,089	Aug-2	1,736	613,571
Jun-19	20,882	205,971	Aug-3	4,812	618,383
Jun-20	23,244	229,215	Aug-4	879	619,262
Jun-21	27,874	257,089	Aug-5	2,220	621,482
Jun-22	16,953	274,042	Aug-6	1,301	622,783
Jun-23	44,591	318,633	Aug-7	2,062	624,845
Jun-24	30,615	349,248	Aug-8	3,501	628,346
Jun-25	28,228	377,476	Aug-9	5,776	634,122
Jun-26	26,105	403,581	Aug-10	3,701	637,823
Jun-27	30,811	434,392	Aug-11	1,739	639,562
Jun-28	26,977	461,369	Aug-12	1,361	640,923
Jun-29	11,265	472,634	Aug-13	1,359	642,282
Jun-30	2,208	474,842	Aug-14	1,605	643,887
Jul-1	771	475,613	Aug-15	1,963	645,850
Jul-2	2,094	477,707	Aug-16	3,944	649,794
Jul-3	2,507	480,214	Aug-17	3,379	653,173
Jul-4	1,405	481,619	Aug-18	2,424	655,597
Jul-5	693	482,312	Aug-19	1,793	657,390
Jul-6	994	483,306	Aug-20	1,830	659,220
Jul-7	1,112	484,418	Aug-21	1,650	660,870

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Date	Escapement		Date	Escapement	
	Daily	Cumulative		Daily	Cumulative
Aug-22	2,314	663,184	Sep-4	1,229	689,401
Aug-23	4,460	667,644	Sep-5	2,180	691,581
Aug-24	1,870	669,514	Sep-6	2,647	694,228
Aug-25	1,738	671,252	Sep-7	1,654	695,882
Aug-26	2,289	673,541	Sep-8	1,341	697,223
Aug-27	2,049	675,590	Sep-9	1,028	698,251
Aug-28	1,003	676,593	Sep-10	715	698,966
Aug-29	2,794	679,387	Sep-11	624	699,590
Aug-30	1,830	681,217	Sep-12	534	700,124
Aug-31	1,389	682,606	Sep-13	443	700,567
Sep-1	1,817	684,423	Sep-14	353	700,920
Sep-2	1,843	686,266	Sep-15	208	701,128
Sep-3	1,906	688,172	Post Weir Total	11,727	

^aPost weir counts from September 5 through September 15 were based on the regression of a three point moving average of catch on escapement. Since the regression value was low ($r^2=.3$), post weir escapement was validated using catch/escapement ratios and interpolation between actual catch dates.

Table 13. Pink, chum, coho, and jack sockeye salmon daily and cumulative escapement estimates through the Chignik River weir by day, 1998.

Date	Pink Escapement		Chum Escapement		Coho Escapement		Sockeye Jack Escapement	
	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative
Jun-13 ^a	0	0	6	6	0	0	0	0
Jun-14	0	0	0	6	0	0	0	0
Jun-15	0	0	0	6	0	0	0	0
Jun-16	0	0	0	6	0	0	0	0
Jun-17	0	0	0	6	0	0	0	0
Jun-18	0	0	0	6	0	0	0	0
Jun-19	0	0	0	6	0	0	0	0
Jun-20	0	0	0	6	0	0	0	0
Jun-21	0	0	0	6	0	0	0	0
Jun-22	0	0	0	6	0	0	0	0
Jun-23	0	0	0	6	0	0	0	0
Jun-24	0	0	0	6	0	0	252	252
Jun-25	0	0	0	6	0	0	72	324
Jun-26	0	0	0	6	0	0	25	349
Jun-27	0	0	0	6	0	0	84	433
Jun-28	0	0	0	6	0	0	138	571
Jun-29	0	0	0	6	0	0	43	614
Jun-30	0	0	0	6	0	0	12	626
Jul-1	0	0	0	6	0	0	6	632
Jul-2	0	0	0	6	0	0	0	632
Jul-3	0	0	0	6	0	0	18	650
Jul-4	0	0	0	6	0	0	14	664
Jul-5	0	0	0	6	0	0	48	712
Jul-6	0	0	0	6	0	0	7	719
Jul-7	0	0	0	6	0	0	12	731
Jul-8	0	0	0	6	0	0	25	756
Jul-9	0	0	0	6	0	0	30	786
Jul-10	0	0	0	6	0	0	24	810
Jul-11	0	0	0	6	0	0	48	858
Jul-12	36	36	6	12	0	0	54	912
Jul-13	6	42	0	12	0	0	6	918
Jul-14	0	42	0	12	0	0	18	936
Jul-15	0	42	0	12	0	0	0	936
Jul-16	18	60	0	12	0	0	6	942
Jul-17	6	66	0	12	0	0	12	954
Jul-18	18	84	0	12	0	0	30	984
Jul-19	6	90	6	18	0	0	0	984
Jul-20	0	90	0	18	0	0	0	984
Jul-21	21	111	0	18	0	0	0	984
Jul-22	6	117	6	24	0	0	0	984
Jul-23	18	135	0	24	0	0	12	996
Jul-24	12	147	0	24	0	0	108	1,104
Jul-25	30	177	0	24	0	0	141	1,245
Jul-26	36	213	6	30	0	0	48	1,293

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Date	Pink Escapement		Chum Escapement		Coho Escapement		Sockeye Jack Escapement	
	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative
Jul-27	30	243	6	36	0	0	24	1,317
Jul-28	0	243	0	36	0	0	4	1,321
Jul-29	18	261	0	36	0	0	30	1,351
Jul-30	30	291	0	36	0	0	60	1,411
Jul-31	12	303	0	36	0	0	36	1,447
Aug-1	12	315	0	36	0	0	12	1,459
Aug-2	18	333	0	36	6	6	12	1,471
Aug-3	114	447	12	48	0	6	74	1,545
Aug-4	39	486	0	48	0	6	12	1,557
Aug-5	180	666	0	48	0	6	42	1,599
Aug-6	84	750	0	48	0	6	48	1,647
Aug-7	219	969	0	48	60	66	6	1,653
Aug-8	552	1,521	0	48	0	66	0	1,653
Aug-9	448	1,969	0	48	30	96	162	1,815
Aug-10	207	2,176	0	48	12	108	0	1,815
Aug-11	90	2,266	0	48	0	108	0	1,815
Aug-12	126	2,392	0	48	0	108	78	1,893
Aug-13	151	2,543	6	54	6	114	42	1,935
Aug-14	281	2,824	6	60	0	114	18	1,953
Aug-15	400	3,224	12	72	6	120	12	1,965
Aug-16	494	3,718	0	72	42	162	24	1,989
Aug-17	891	4,609	6	78	18	180	6	1,995
Aug-18	708	5,317	0	78	24	204	18	2,013
Aug-19	767	6,084	0	78	48	252	48	2,061
Aug-20	469	6,553	0	78	96	348	0	2,061
Aug-21	380	6,933	0	78	120	468	6	2,067
Aug-22	518	7,451	0	78	126	594	36	2,103
Aug-23	435	7,886	18	96	324	918	12	2,115
Aug-24	400	8,286	6	102	330	1,248	0	2,115
Aug-25	399	8,685	6	108	336	1,584	0	2,115
Aug-26	461	9,146	12	120	1,284	2,868	12	2,127
Aug-27	221	9,367	0	120	444	3,312	18	2,145
Aug-28	282	9,649	12	132	147	3,459	6	2,151
Aug-29	360	10,009	0	132	626	4,085	21	2,172
Aug-30	390	10,399	18	150	2,283	6,368	6	2,178
Aug-31	424	10,823	0	150	1,818	8,186	6	2,184
Sep-1	216	11,039	0	150	1,935	10,121	0	2,184
Sep-2	217	11,256	0	150	2,065	12,186	18	2,202
Sep-3	123	11,379	6	156	758	12,944	12	2,214
Sep-4	111	11,490	0	156	1,180	14,124	0	2,214
Weir Removed								
Sep-5	Post Weir Coho Estimates ^b				2,318	16,442		
Sep-6					3,697	20,139		
Sep-7					1,854	21,993		
Sep-8					1,530	23,523		

-Continued-

Table 13. (page 3 of 3)

Date	Pink Escapement	Chum Escapement	Sockeye	
	Daily Cumulative	Daily Cumulative	Coho Escapement	Jack Escapement
			Daily Cumulative	Daily Cumulative
Sep-9			1,206	24,729
Sep-10			888	25,617
Sep-11			750	26,367
Sep-12			611	26,978
Sep-13			472	27,450
Sep-14			334	27,784
Sep-15			37	27,821
		Post Weir Total	13,697	

^a Although first day of counting for pink, chum, coho, and jack sockeye salmon was on May 24, the first fish tallied from any of these species was actually on June 13.

^b Post weir counts from September 5 through September 15 were based on the regression of catch on escapement ($r^2=.86$). Catch was estimated on non catch days by interpolation between the nearest catch days. Coho escapement was then estimated on actual and interpolated catches.

Table 14. Pink salmon catch, escapement, and run by district (in thousands of fish) in the Chignik Management Area, 1989-1998.

District	Year	Catch	Escapement	Run
Chignik Bay	1988	119.8	22.4	142.2
	1989	27.7	13.5	41.2
	1990	94.5	6	100.5
	1991	76.2	12.2	88.4
	1992	178.2	55.8	234
	1993	55.9	2	57.9
	1994	59.4	75.8	135.2
	1995	106.9	180.5	287.4
	1996	1.5	43.1	44.6
	1997	39.5	59.4	98.9
	1998	26.1	24.4	50.5
	Average 1988-1997	76.0	47.1	123.0
Central	1988	318.4	216.4	534.8
	1989	0.0	215.0	215.0
	1990	233.7	131.9	365.6
	1991	174.0	201.1	375.1
	1992	205.7	223.8	429.5
	1993	198.5	160.9	359.4
	1994	99.1	178.9	278.0
	1995	469.7	715.5	1,185.2
	1996	15.8	237.1	252.9
	1997	600.0	594.6	1,194.6
	1998	233.7	210.9	444.6
	Average 1988-1997	231.5	287.5	519.0
Eastern	1988	1006.4	1005.4	2,011.8
	1989	0.0	881.0	881.0
	1990	40.6	811.4	852.0
	1991	28.0	125.0	153.0
	1992	183.1	1,318.1	1,501.2
	1993	59.3	524.7	584.0
	1994	13.0	863.3	876.3
	1995	8.6	1,399.3	1,407.9
	1996	7.2	1,059.6	1,066.8
	1997	72.3	1,287.7	1,360.0
	1998	66.7	1,273.2	1,339.9
	Average 1988-1997	141.9	927.6	1069.4

-Continued-

Table 14. (page 2 of 2)

District	Year	Catch	Escapement	Run
Western (Cont.)	1988	1141.4	232.4	1,373.8
	1989	0.0	57.9	57.9
	1990	135.8	44.3	180.1
	1991	419.3	96.8	516.1
	1992	628.9	38.8	667.7
	1993	685.6	45.8	731.4
	1994	174.6	111.6	286.2
	1995	791.7	554.7	1,346.4
	1996	100.9	220.8	321.7
	1997	118.9	306.3	425.2
	1998	343.2	150.4	493.6
	Average 1988-1997	419.7	170.9	590.7
Perryville	1988	411.2	181.3	592.5
	1989	0.0	267.4	267.4
	1990	45.4	88.4	133.8
	1991	471.9	343.5	815.4
	1992	358.2	190.4	548.6
	1993	649.1	448.4	1,097.5
	1994	84.9	153.9	238.8
	1995	681.0	582.1	1,263.1
	1996	58.5	395.7	454.2
	1997	13.8	221.5	235.3
	1998	107.3	222.8	330.1
	Average 1988-1997	277.4	287.3	564.7
All District Total	1988	2997.2	1657.9	4,655.1
	1989	27.7	1,434.8	1,462.5
	1990	550.0	1,082.0	1,632.0
	1991	1,169.2	778.6	1,947.8
	1992	1,554.1	1,826.9	3,381.0
	1993	1,648.4	1,181.8	2,830.2
	1994	431.1	1,383.5	1,814.6
	1995	2,058.0	3,432.0	5,490.0
	1996	183.8	1,956.4	2,140.2
	1997	844.4	2,469.5	3,313.9
	1998	777.0	1,881.8	2,658.8
	Average 1988-1997	1,146.4	1,720.3	2,866.7

Table 15. Chum salmon catch, escapement, and run by district (in thousands of fish) in the Chignik Management Area, 1989-1998.

District	Year	Catch	Escapement	Run
Chignik Bay	1988	7.0	15.3	22.3
	1989	1.6	4.2	5.8
	1990	11.5	1.5	13.0
	1991	17.5	0.0	17.5
	1992	12.7	0.1	12.8
	1993	8.1	0.3	8.4
	1994	25.3	1.5	26.8
	1995	14.6	10.3	24.9
	1996	0.6	16.4	17.0
	1997	21.0	18.5	39.5
	1998	7.4	4.5	11.9
Average	1988-1997	12.0	6.8	18.8
Central	1988	39.3	55.8	95.1
	1989	0.0	34.7	34.7
	1990	113.7	28.0	141.7
	1991	51.4	18.0	69.4
	1992	45.5	173.1	218.6
	1993	43.0	39.4	82.4
	1994	69.6	102.6	172.2
	1995	107.1	44.5	151.6
	1996	26.1	45.1	71.2
	1997	103.4	65.7	169.1
	1998	43.0	32.0	75.0
Average	1988-1997	59.9	60.7	120.6
Eastern	1988	77.5	221.9	299.4
	1989	0.0	74.3	74.3
	1990	27.5	139.7	167.2
	1991	4.9	70.4	75.3
	1992	61.2	306.9	368.1
	1993	21.4	135.2	156.6
	1994	4.3	129.2	133.5
	1995	8.0	112.8	120.8
	1996	19.7	130.5	150.2
	1997	11.4	290.0	301.4
	1998	5.2	97.7	102.9
Average	1988-1997	23.6	161.1	184.7

-Continued-

Table 15. (page 2 of 2)

District	Year	Catch	Escapement	Run
Western	1988	102.7	27.4	130.1
	1989	0.0	7.4	7.4
	1990	91.6	28.8	120.4
	1991	98.6	38.1	136.7
	1992	65.5	53.3	118.8
	1993	25.0	14.0	39
	1994	94.1	23.0	117.1
	1995	158.3	45.7	204.0
	1996	36.3	44.5	80.8
	1997	17.1	60.5	77.6
	1998	41.4	30.6	72.0
Average	1988-1997	68.9	34.3	103.2
Perryville	1988	41.2	41.4	82.6
	1989	0.0	15.9	15.9
	1990	25.7	55.8	81.5
	1991	88.6	343.2	431.8
	1992	37.2	40.3	77.5
	1993	24.7	66.8	91.5
	1994	34.0	126.0	160.0
	1995	93.0	134.6	227.6
	1996	17.0	132.0	149.0
	1997	3.0	152.8	155.8
	1998	31.8	214.5	246.3
Average	1988-1997	36.4	110.9	147.3
All District Total	1988	267.7	361.8	629.5
	1989	1.6	136.5	138.1
	1990	270.0	253.8	523.8
	1991	261.0	469.7	730.7
	1992	222.1	573.7	795.8
	1993	122.4	255.7	378.1
	1994	227.3	382.4	609.7
	1995	380.9	347.8	728.7
	1996	99.8	368.5	468.3
	1997	155.9	587.4	743.3
	1998	128.8	379.2	508.0
Average	1988-1997	200.9	373.7	574.6

Table 16. Coho escapement by year in the Chignik Lakes and other Chignik Management Area streams, 1988-1998.^a

District	Year	Chignik Lakes	Other Streams
Chignik Bay	1988	147.5	
	1989	80.0	
	1990	44.0	
	1991	53.0	
	1992	27.8	
	1993	36.0	
	1994	55.5	
	1995	19.1	
	1996	38.9	
	1997	46.1	0.7
	1998	27.8	Trace
Average 88-97		42.8	
Central	1988		
	1989		
	1990		
	1991		
	1992		2.3
	1993		
	1994		1.6
	1995		0.0
	1996		0.0
	1997		0.2
	1998		4.2
Eastern	1988		
	1989		0.2
	1990		
	1991		
	1992		9.1
	1993		
	1994		31.7
	1995		0.0
	1996		6.5
	1997		0.0
	1998		12.5
Western	1988		
	1989		
	1990		
	1991		
	1992		0.0
	1993		
	1994		0.0

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Table 16. (page 2 of 2)

District	Year	Chignik Lakes	Other Streams
Western (Cont.)	1995		0.0
	1996		6.5
	1997		0.0
	1998		10.3
Perryville	1988		
	1989		
	1990		
	1991		
	1992		0.0
	1993		
	1994		0.0
	1995		0.0
	1996		7.7
	1997		0.2
	1998		42.8

^aCoho surveys are incomplete because of budget constraints and the only data provided is from surveys late enough in the season to estimate coho salmon. Even where survey information is provided, surveys were not taken beyond early September. Prior to 1995, Chignik Lakes coho salmon were estimated by using Chignik Bay District catch and escapement ratios. From 1995, coho have been estimated by weir.

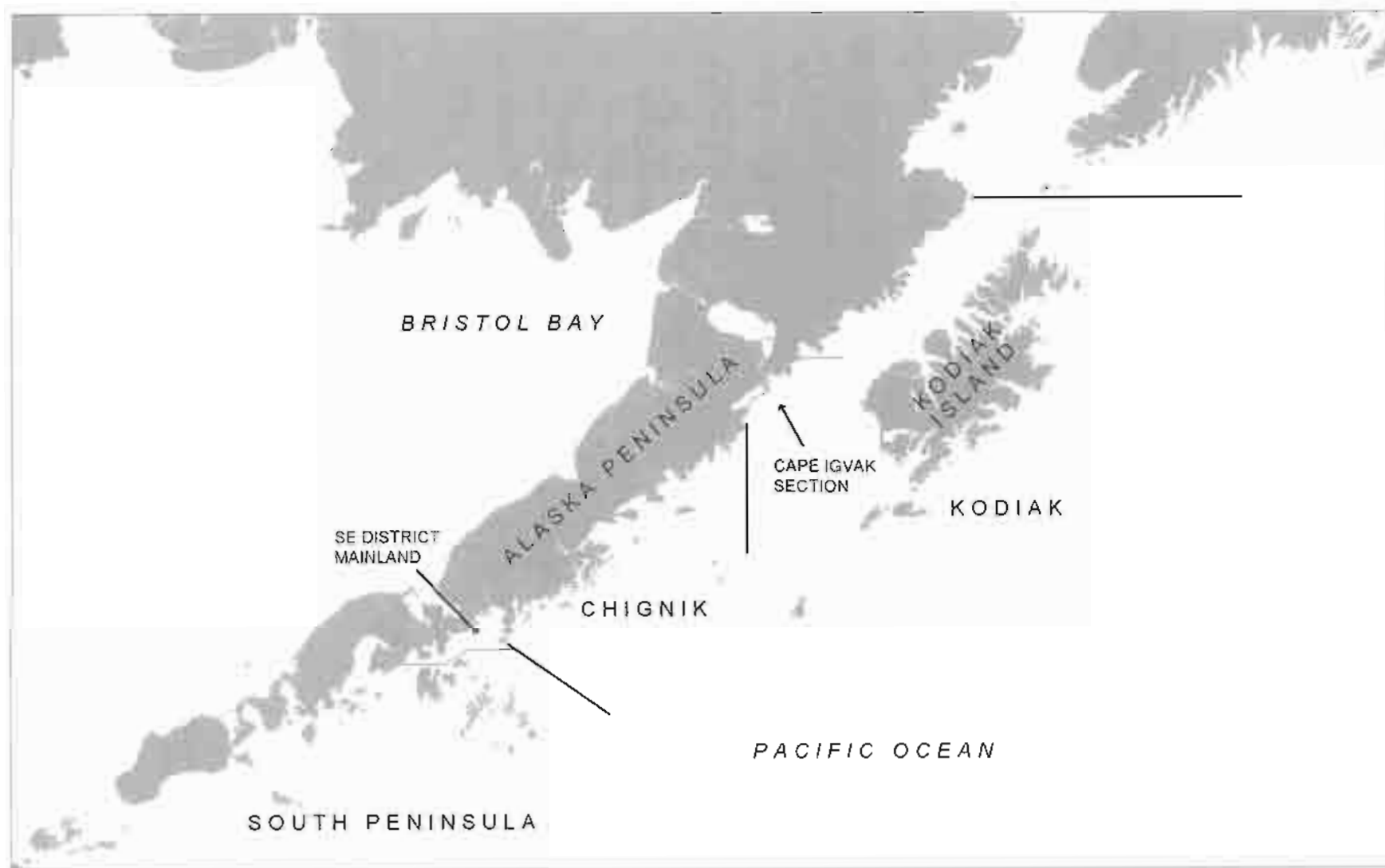


Figure 1. Map of the Chignik Management Area illustrating its location relative to the Alaska Peninsula and the Kodiak Island Management Areas.

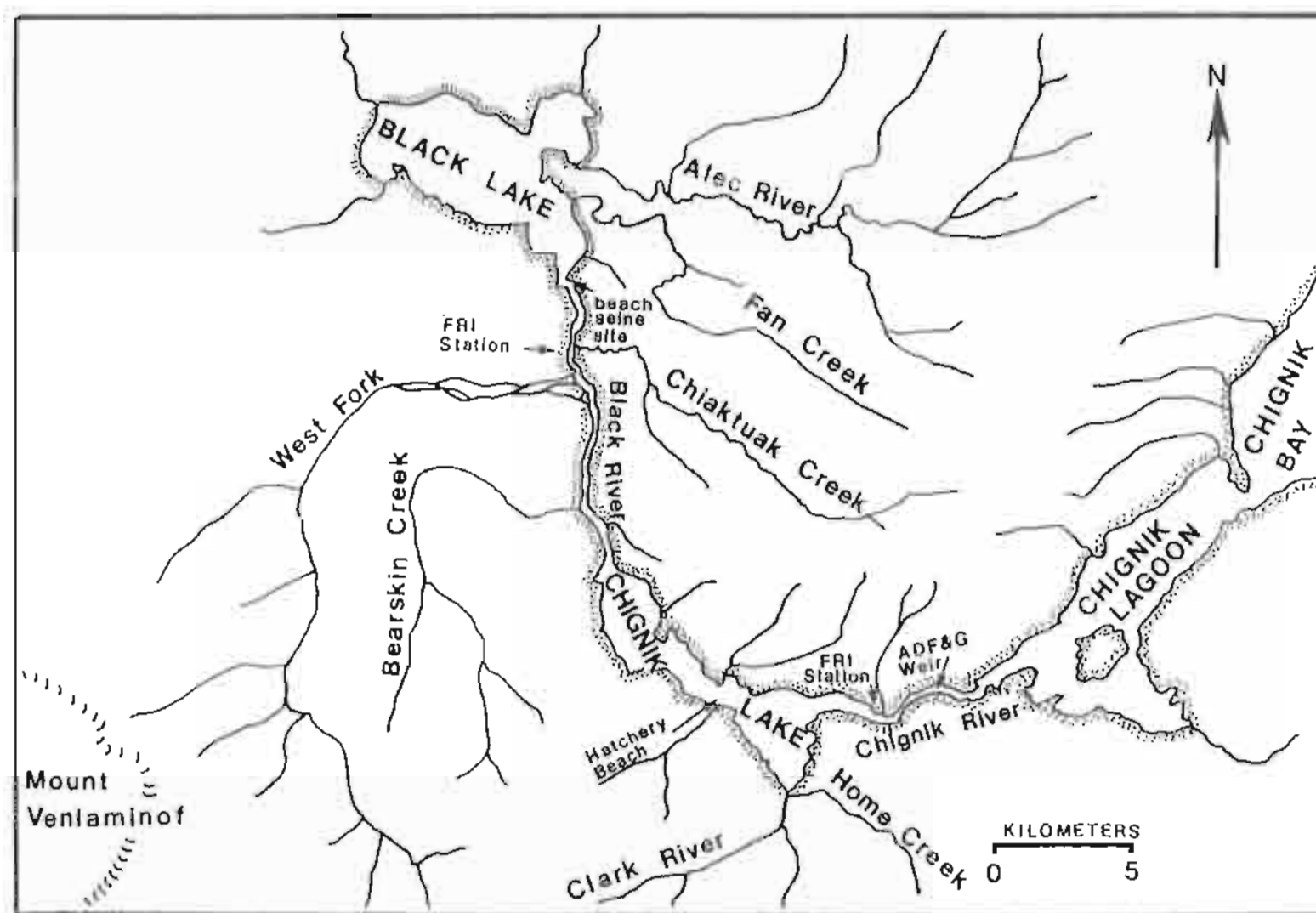


Figure 2. Map of the Chignik watershed.

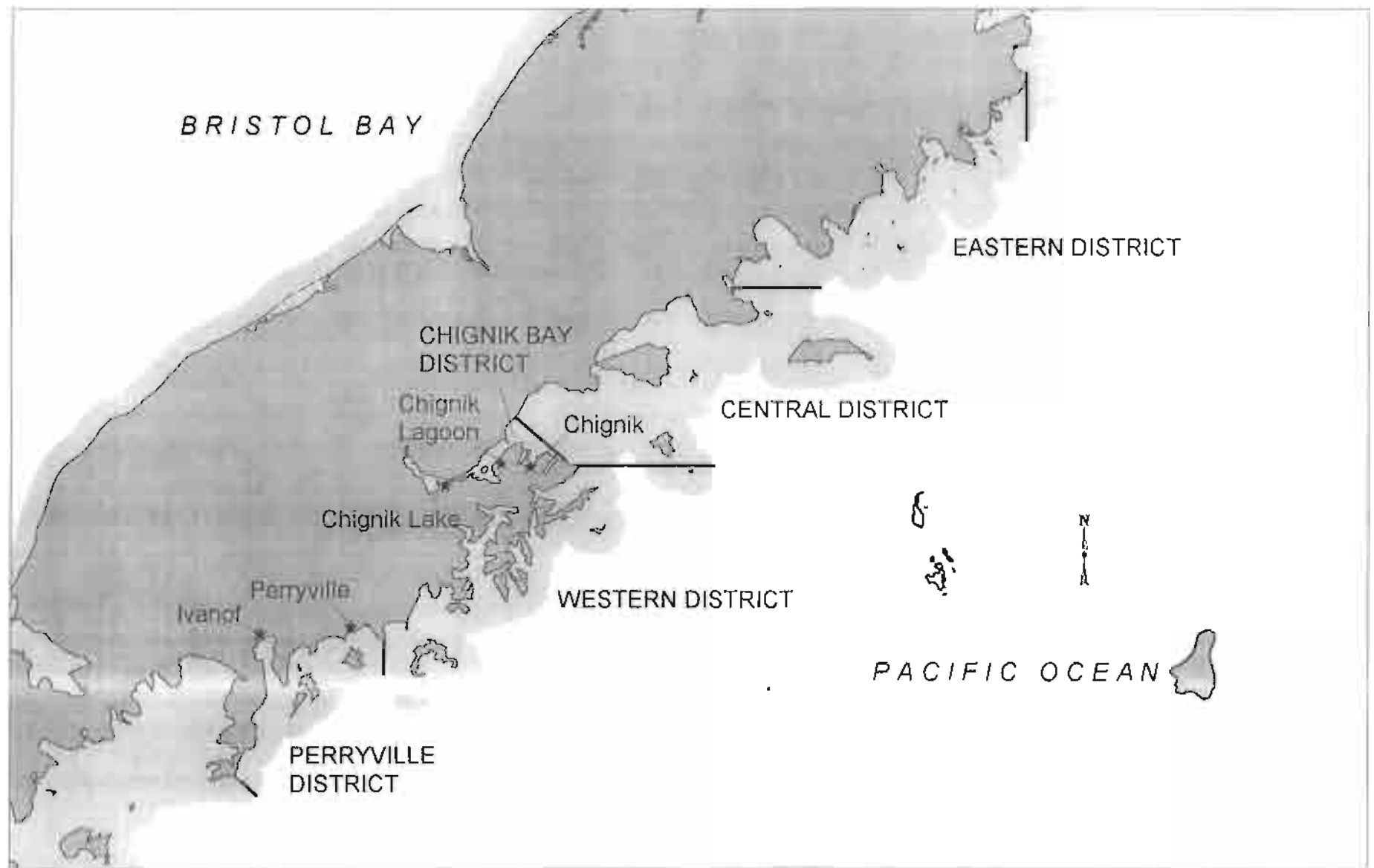


Figure 3. Map illustrating district boundaries and village locations within the Chignik Management Area.

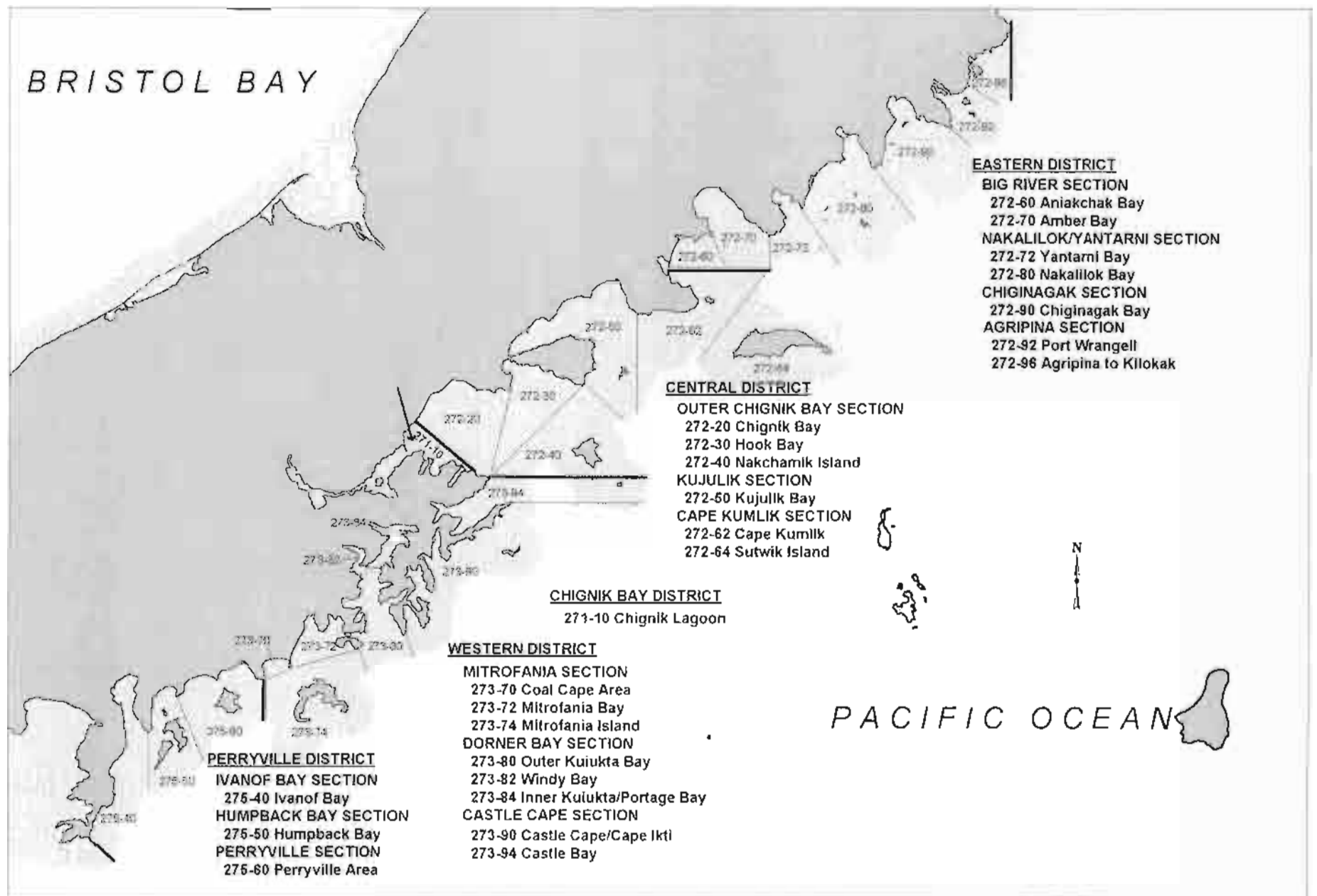


Figure 4. Map of Chignik Management Area illustrating district boundaries and statistical areas.

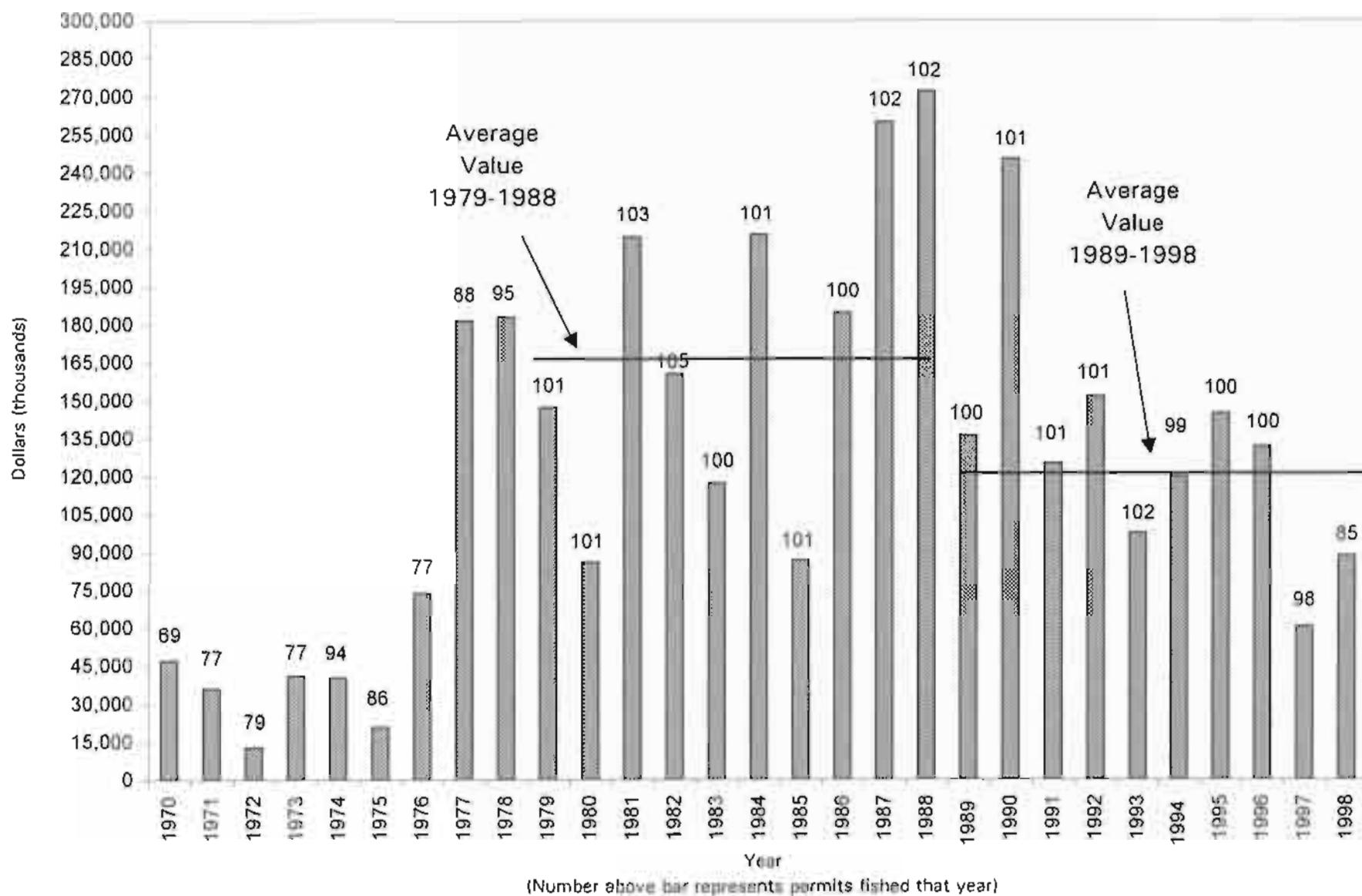


Figure 5: Average economic salmon value per Chignik Management Area permit holder, 1970-1998.

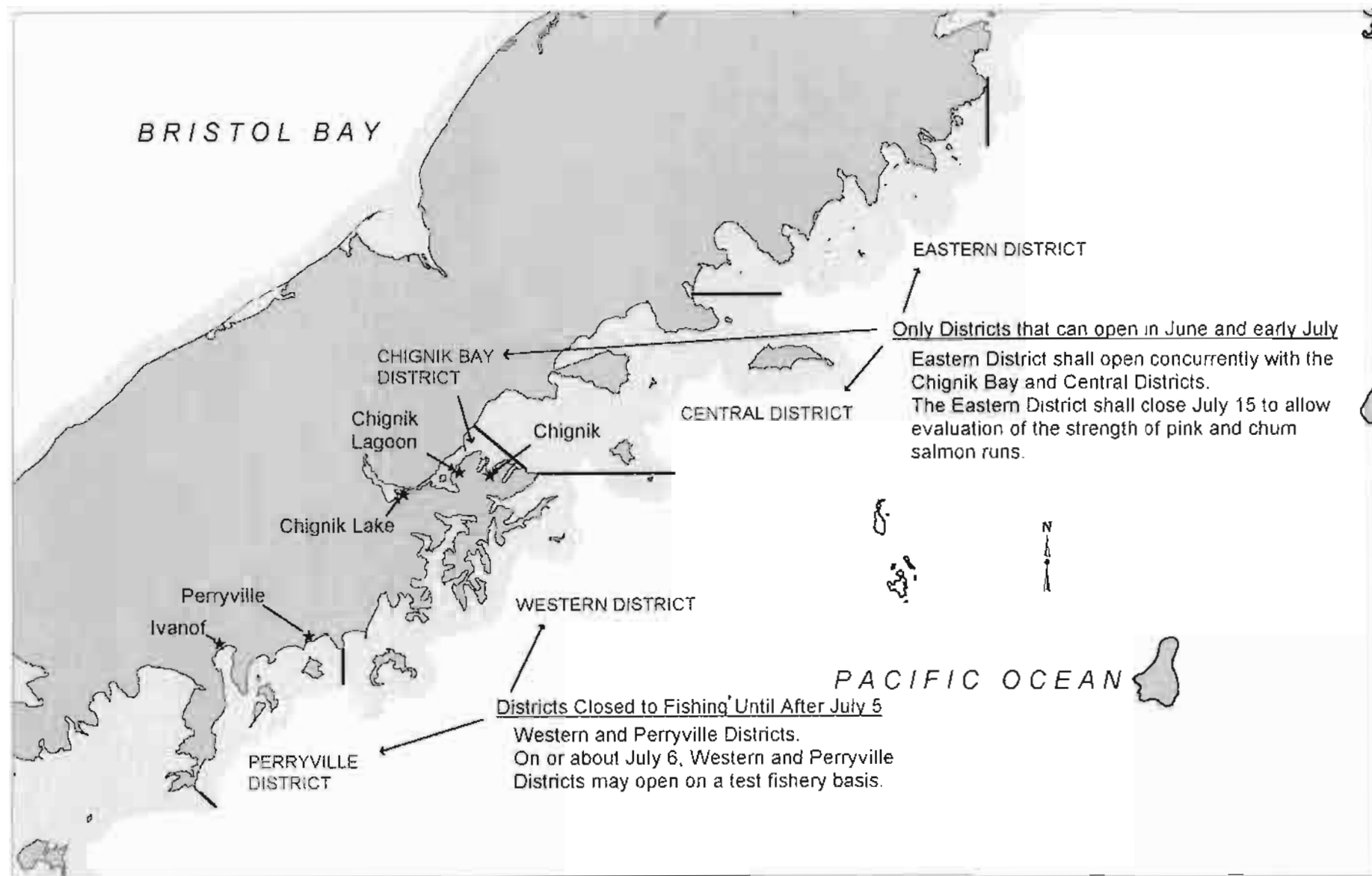


Figure 6. Map illustrating salmon management strategies during June and early July in the Chignik Management Area.

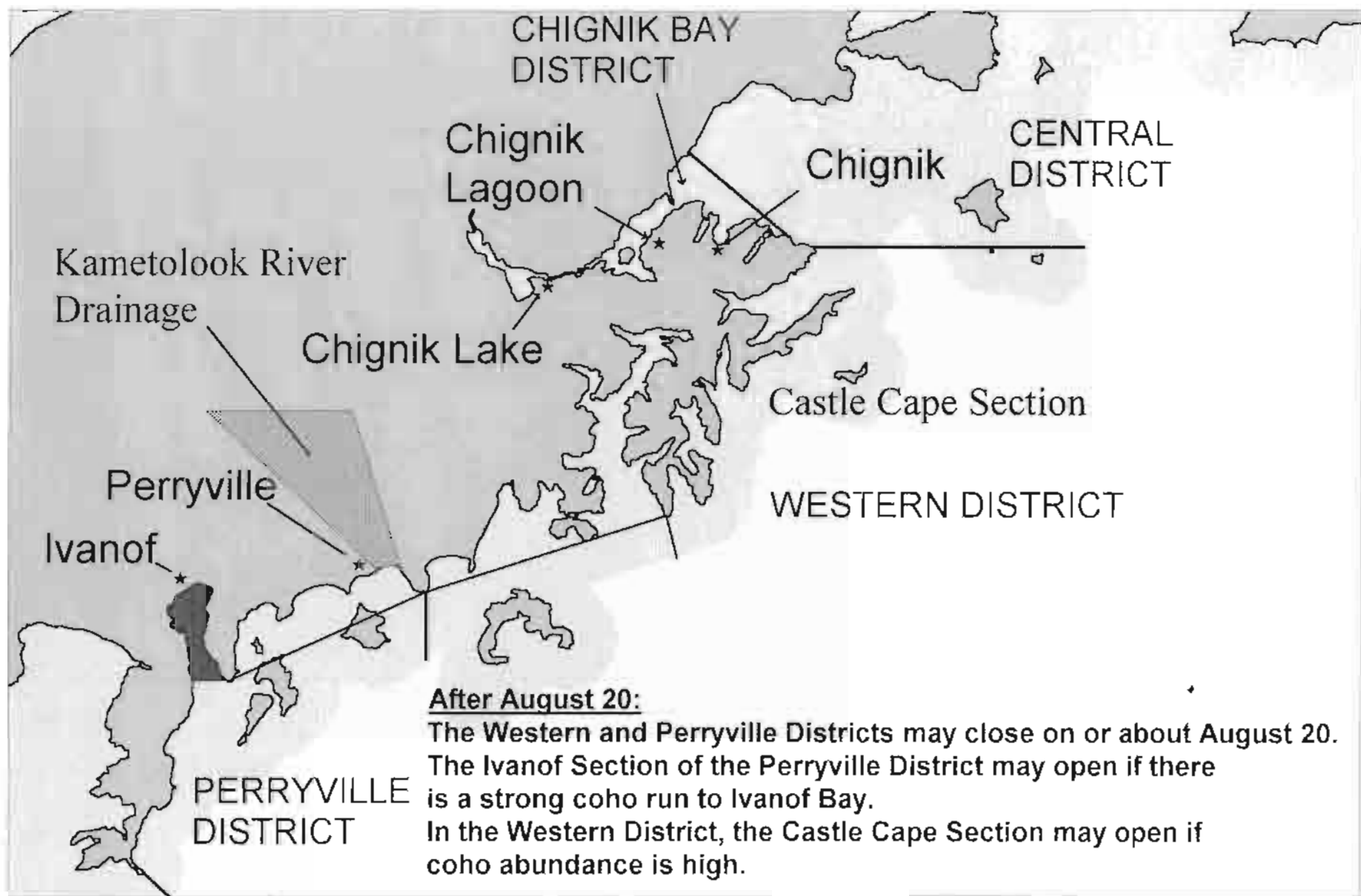


Figure 7. Map illustrating late season salmon management strategies in the Chignik Management Area.

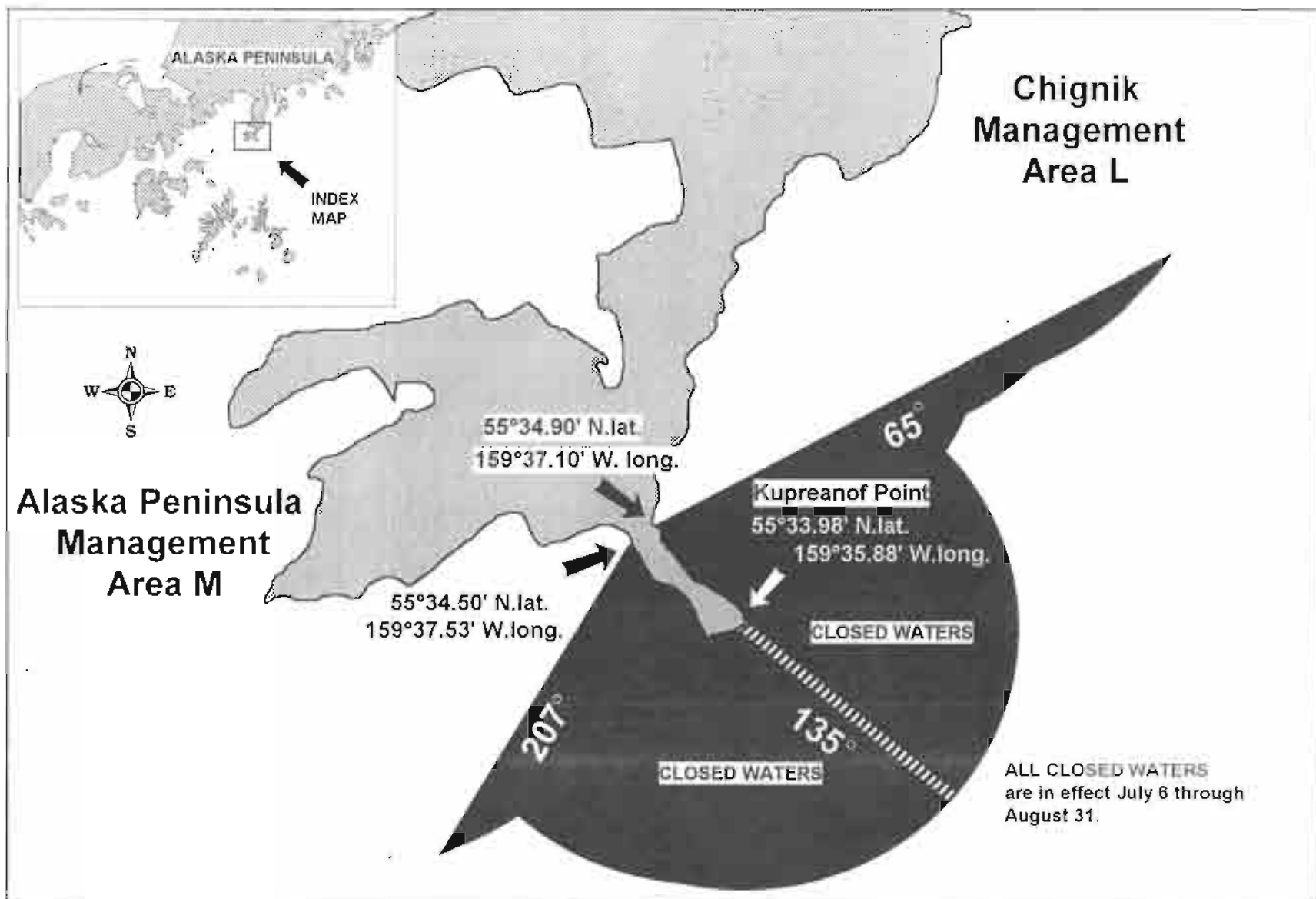


Figure 8. Closed waters around Kupreanof Point; the dividing line between Area M (South Peninsula) and Area L (Chignik).

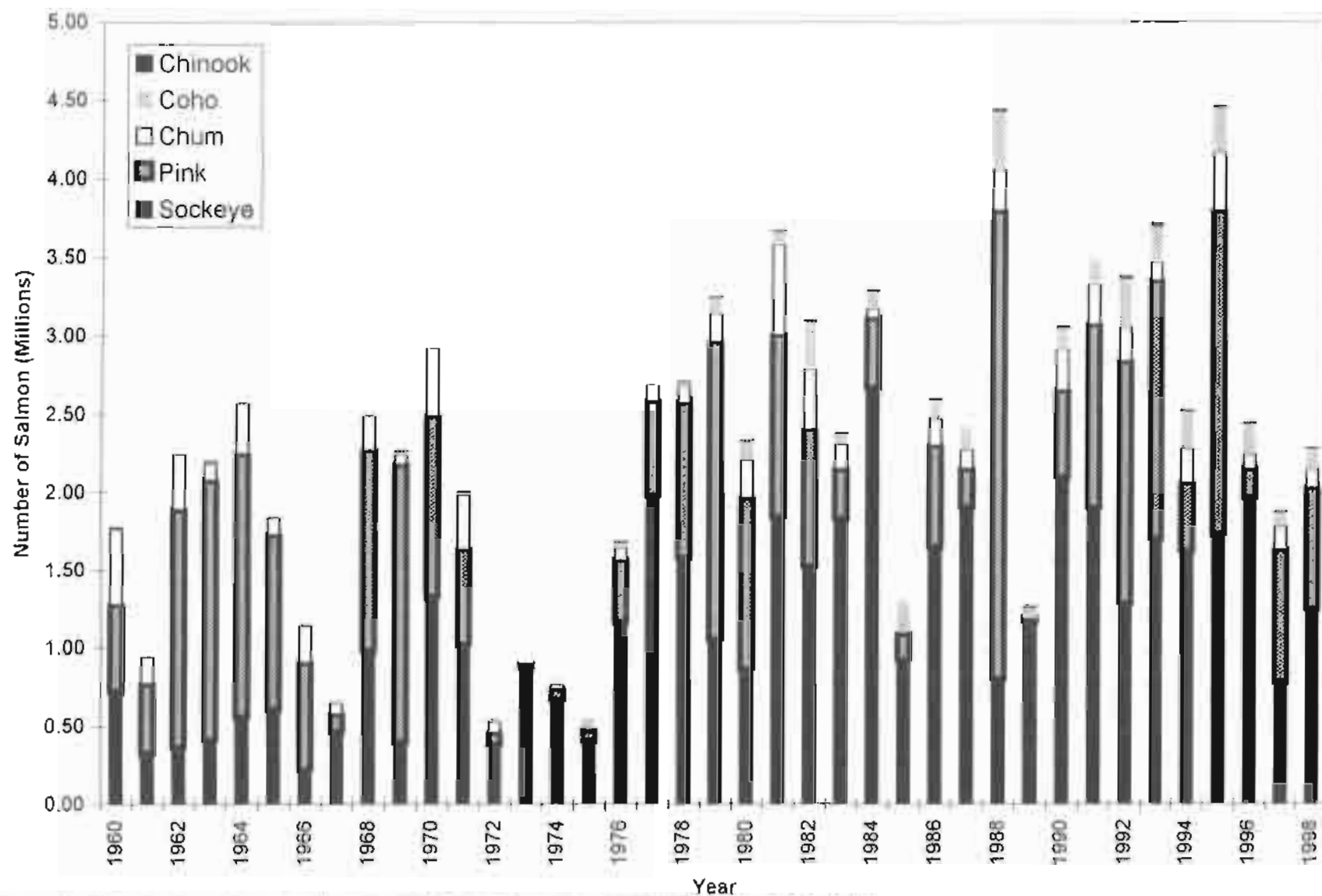


Figure 9. Total salmon harvests by species in the Chignik Management Area, 1960-1998.

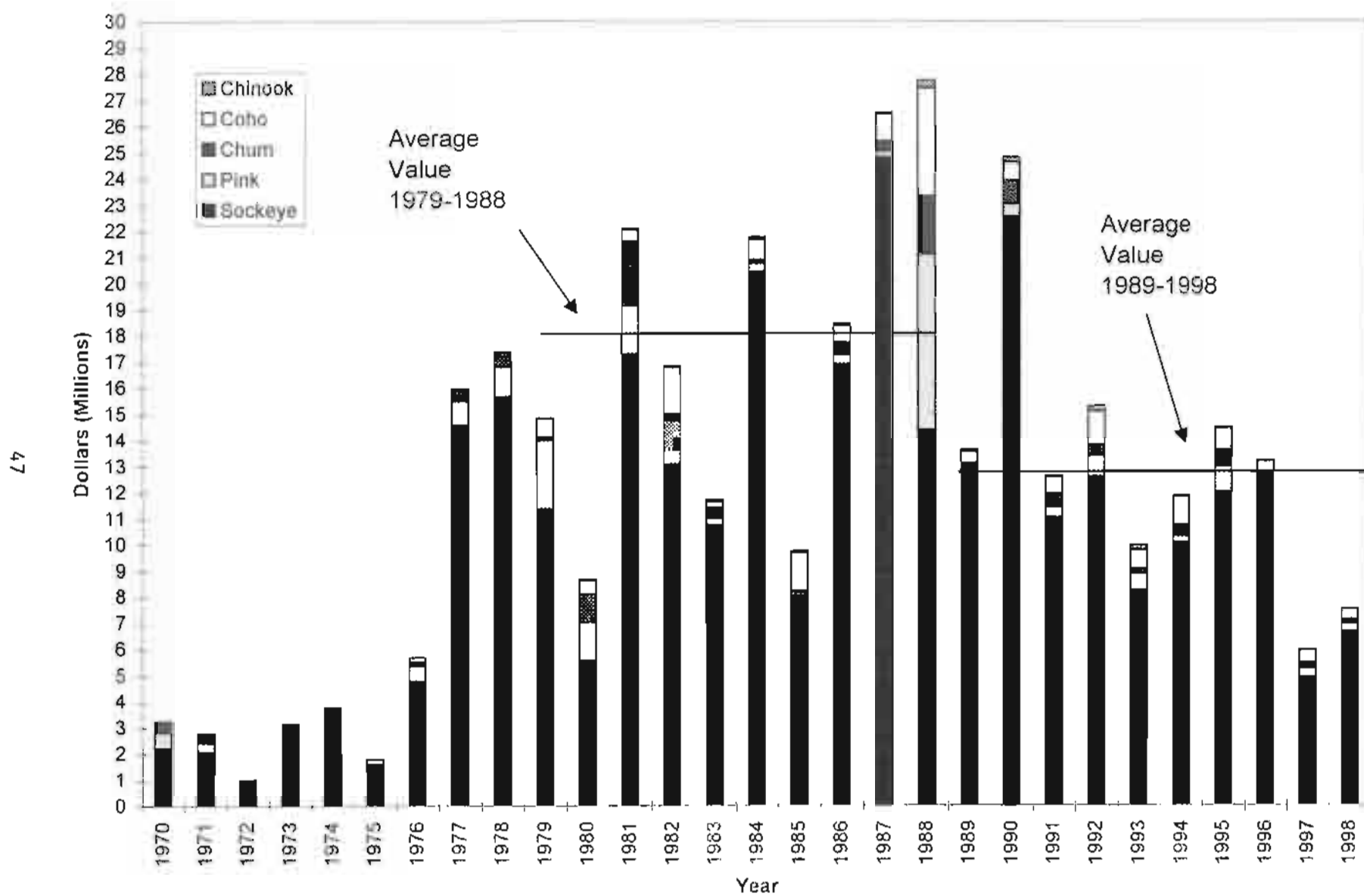


Figure 10. Exvessel value of the salmon harvest in the Chignik Management Area, 1970-1998.

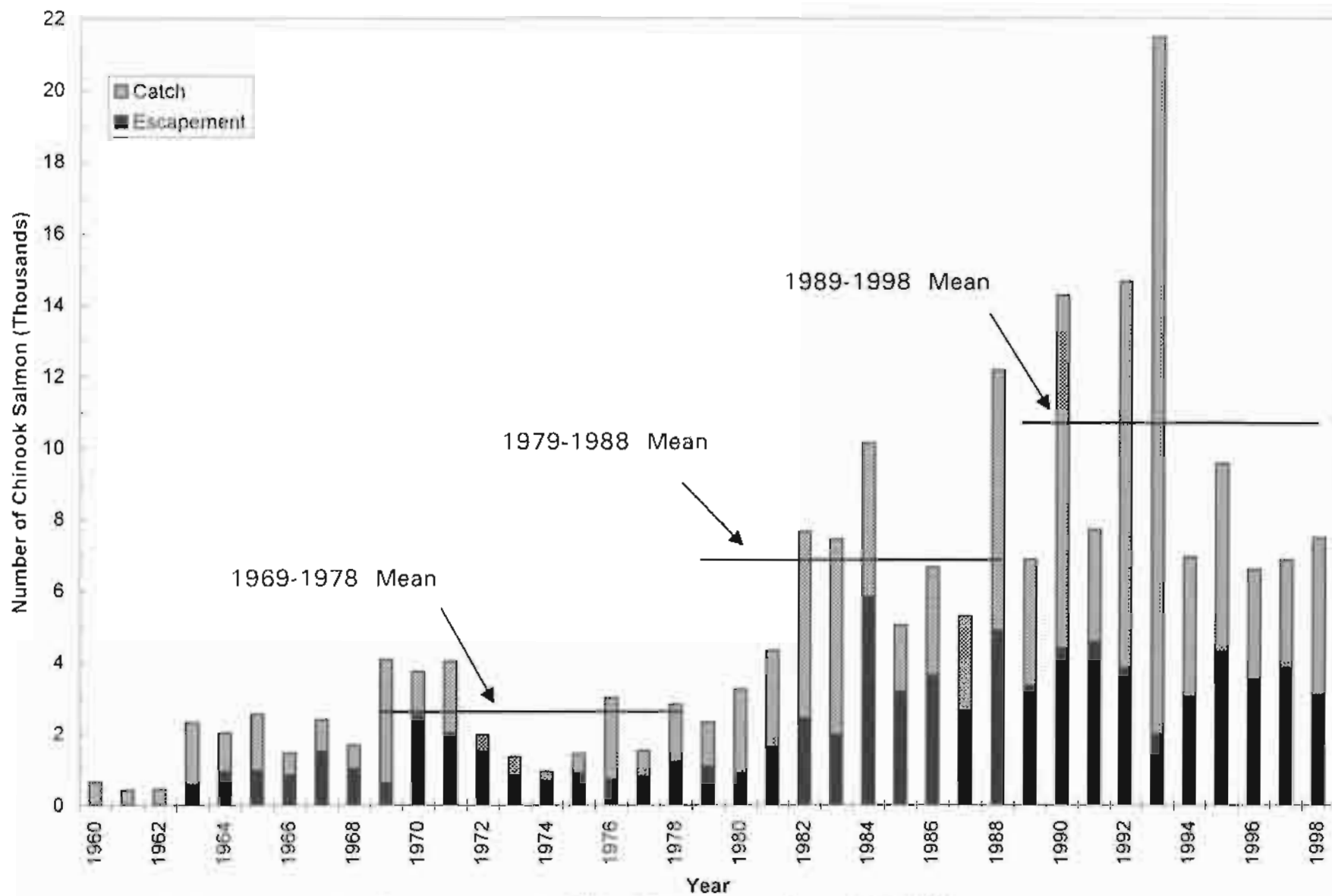


Figure 11. Chinook salmon catch and escapement in the Chignik Management Area, 1960-1998.

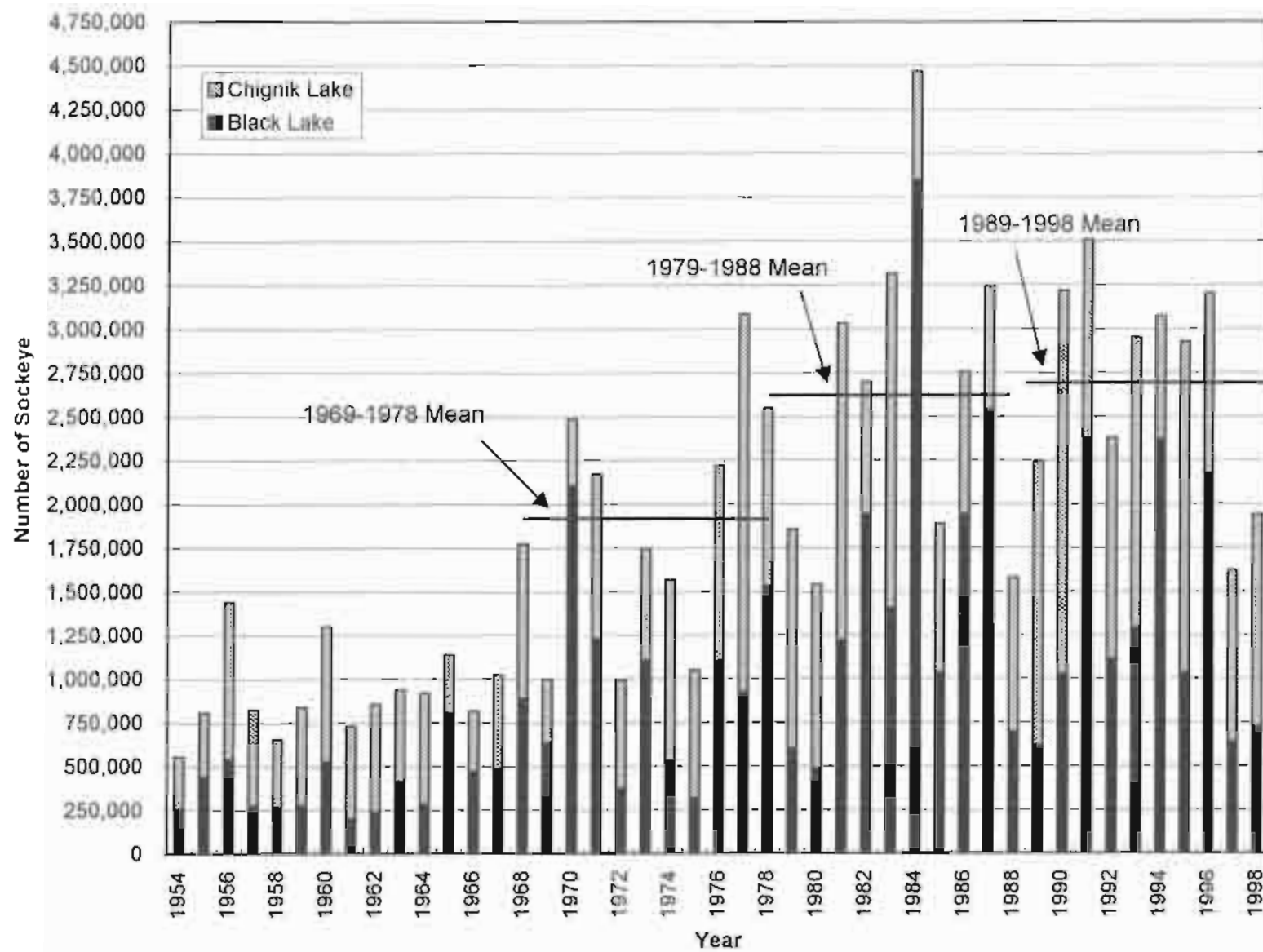


Figure 12. Total sockeye salmon runs to Black and Chignik Lakes, 1954-1998.

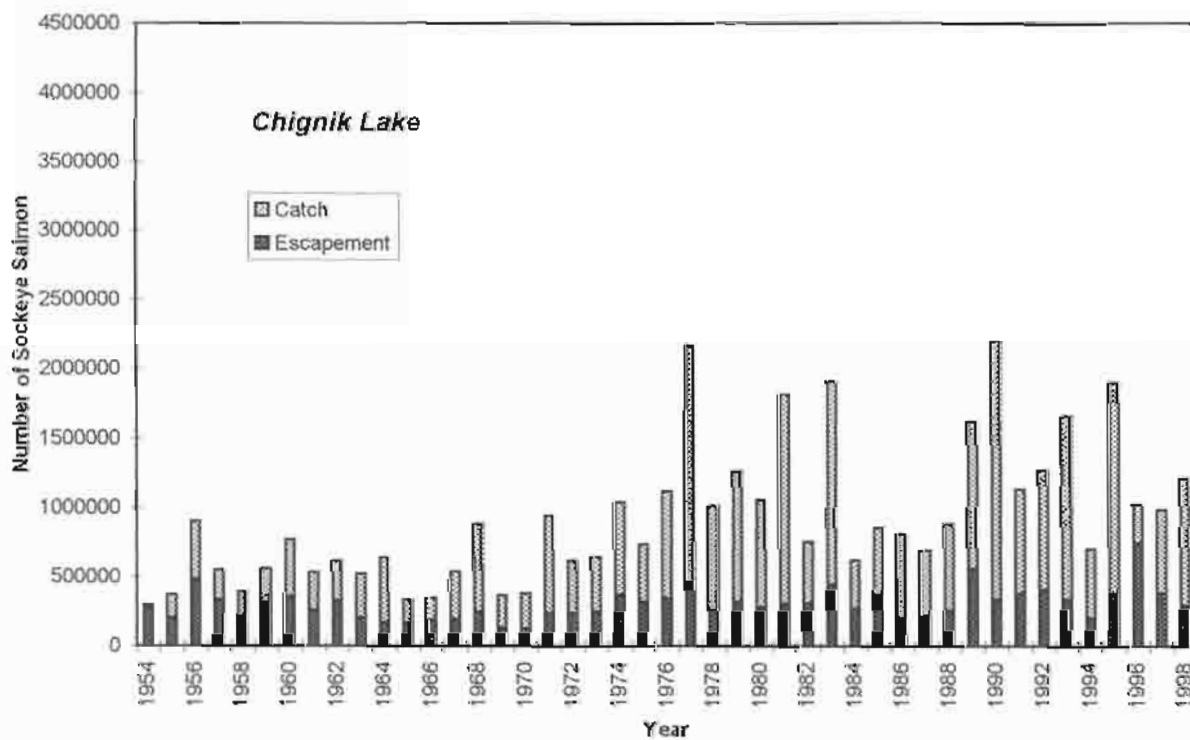
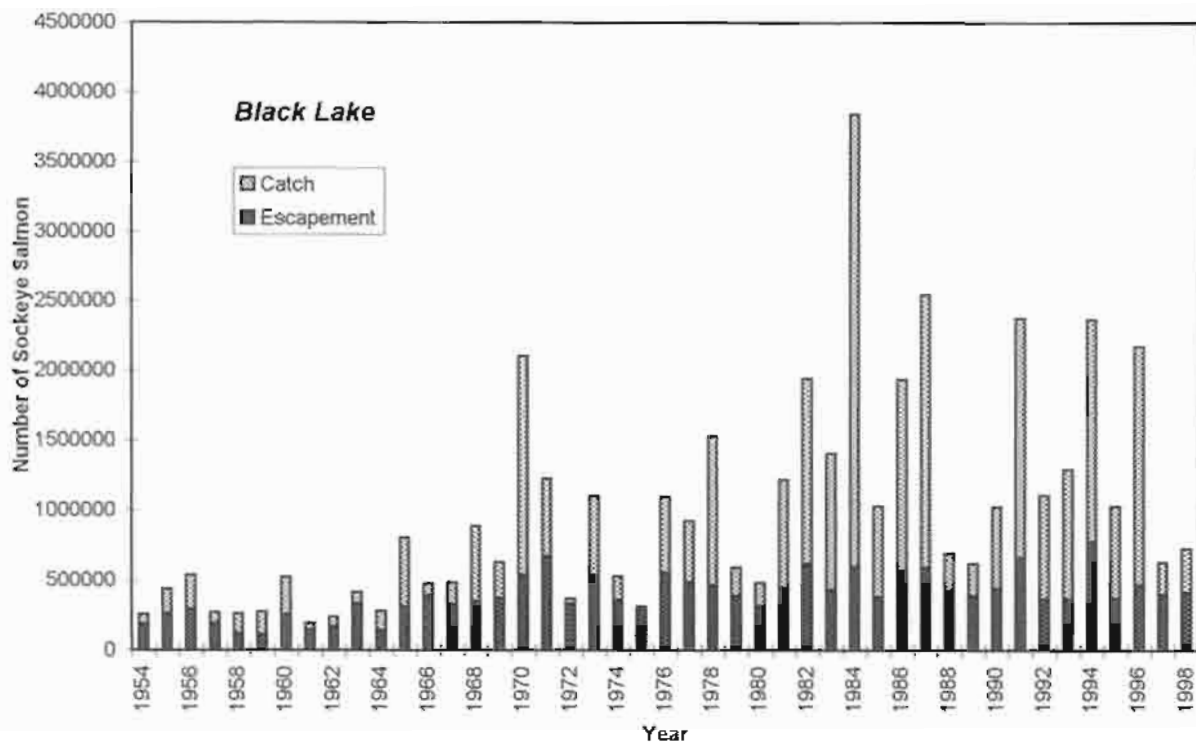


Figure 13. Black and Chignik Lake sockeye salmon catch and escapement, 1954-1998.

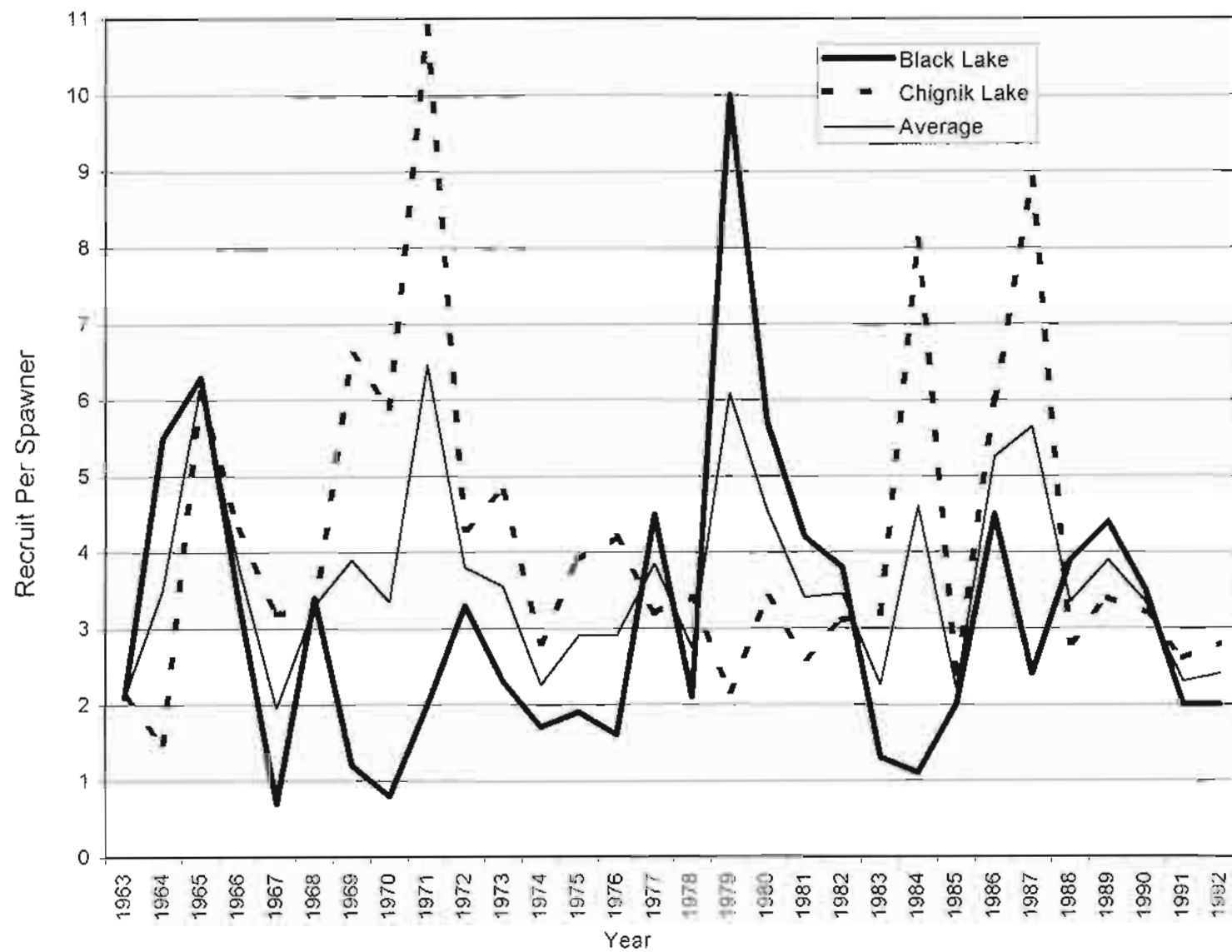


Figure 14. Comparison of sockeye salmon recruit per spawner relationships between Black Lake and Chignik Lake, 1963-1992.

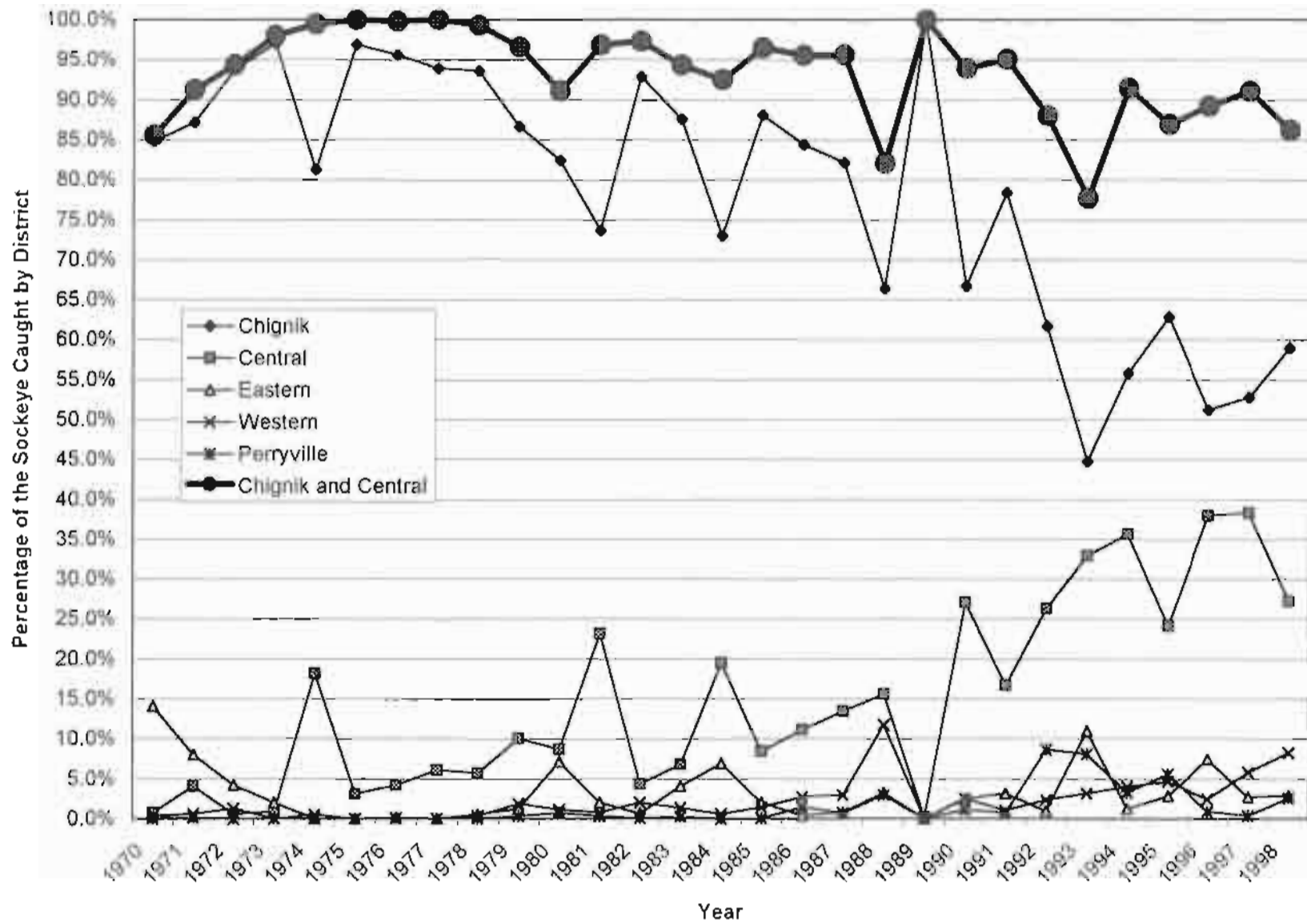


Figure 13. Percentage of the sockeye salmon caught by district within the Chignik Management Area, 1970-1998.

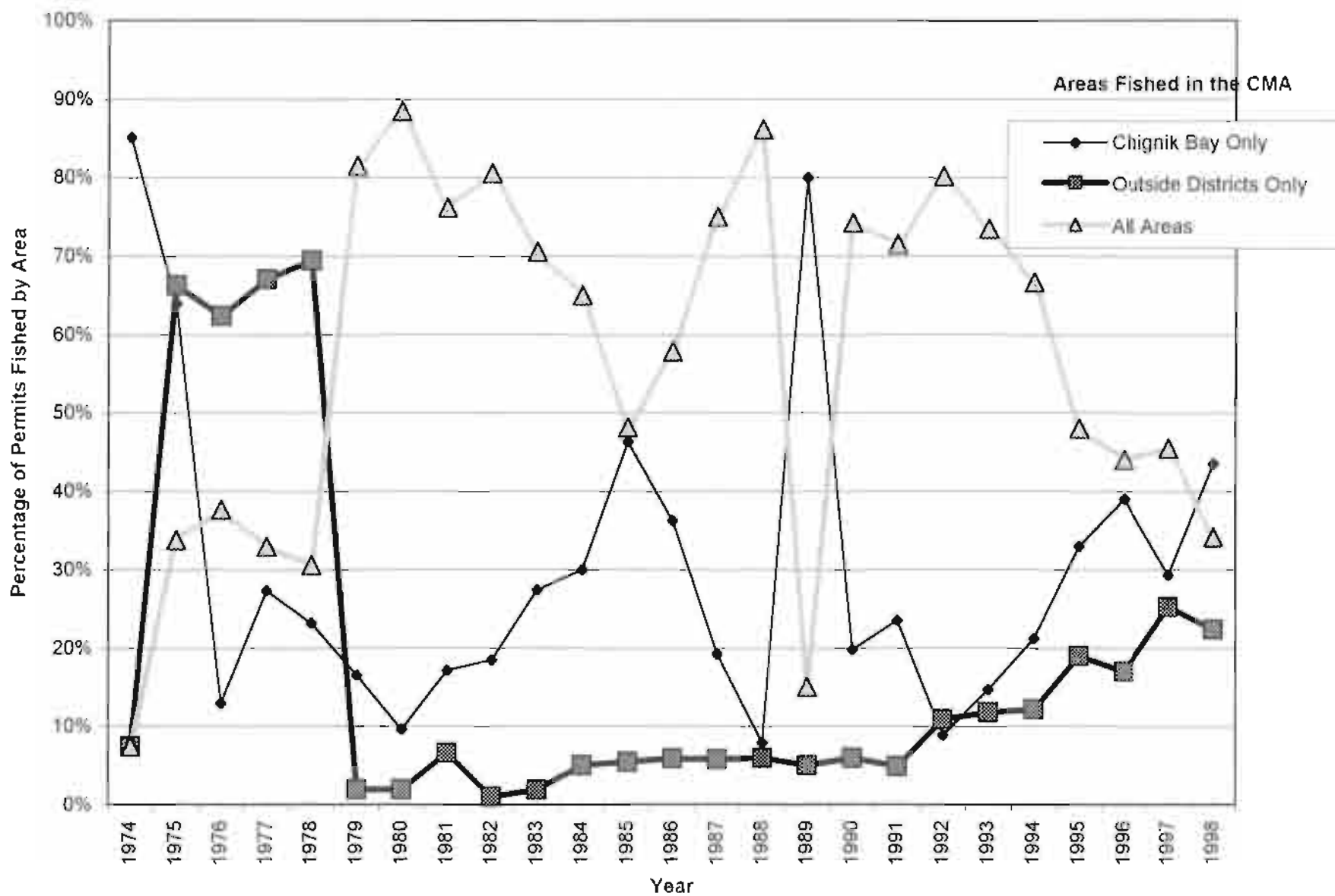


Figure 16. Percentage of the permits that have been fished by area within the Chignik Management Area, 1974-1998.

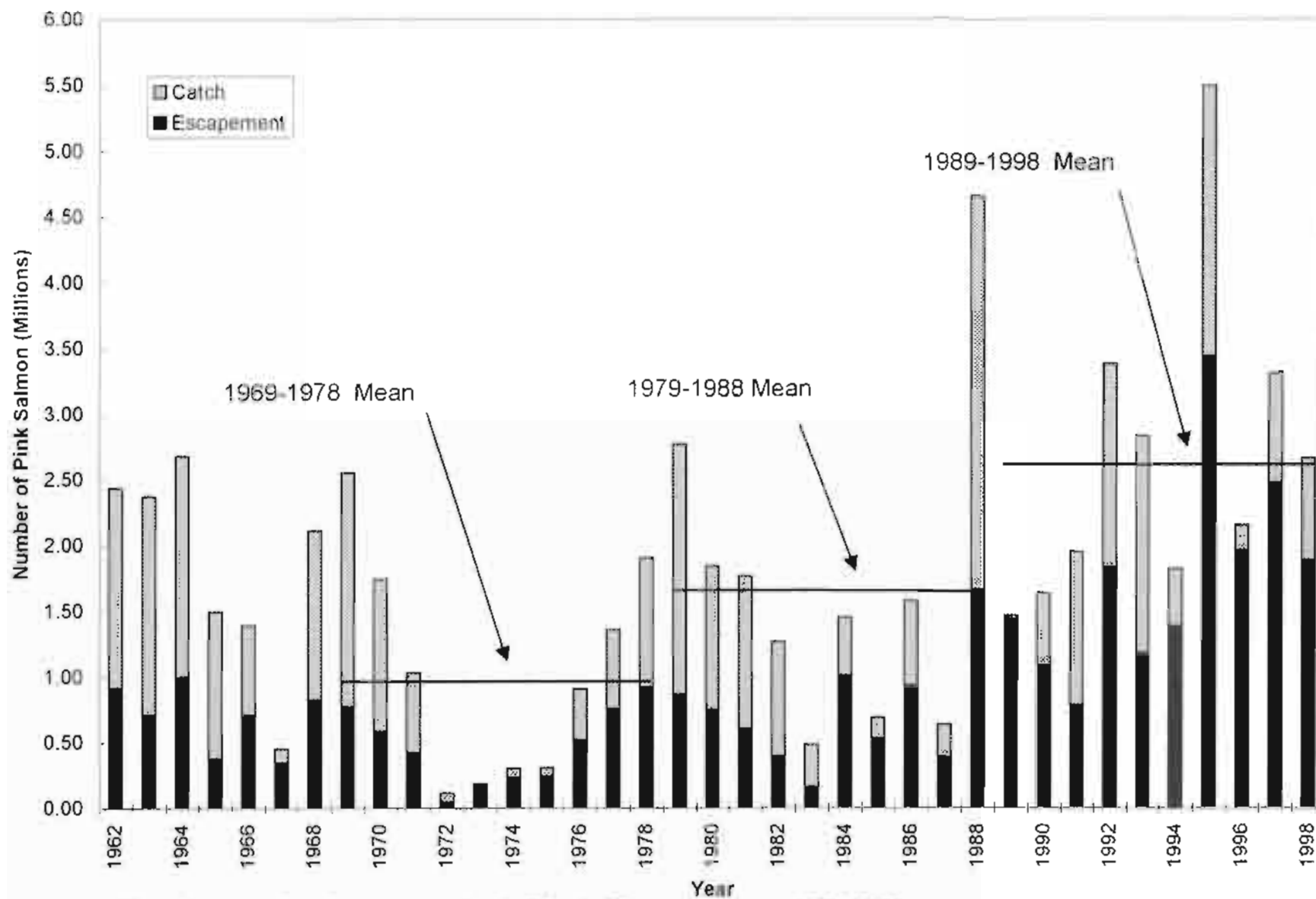


Figure 17 Pink salmon catch and escapement in the Chignik Management Area, 1962-1998.

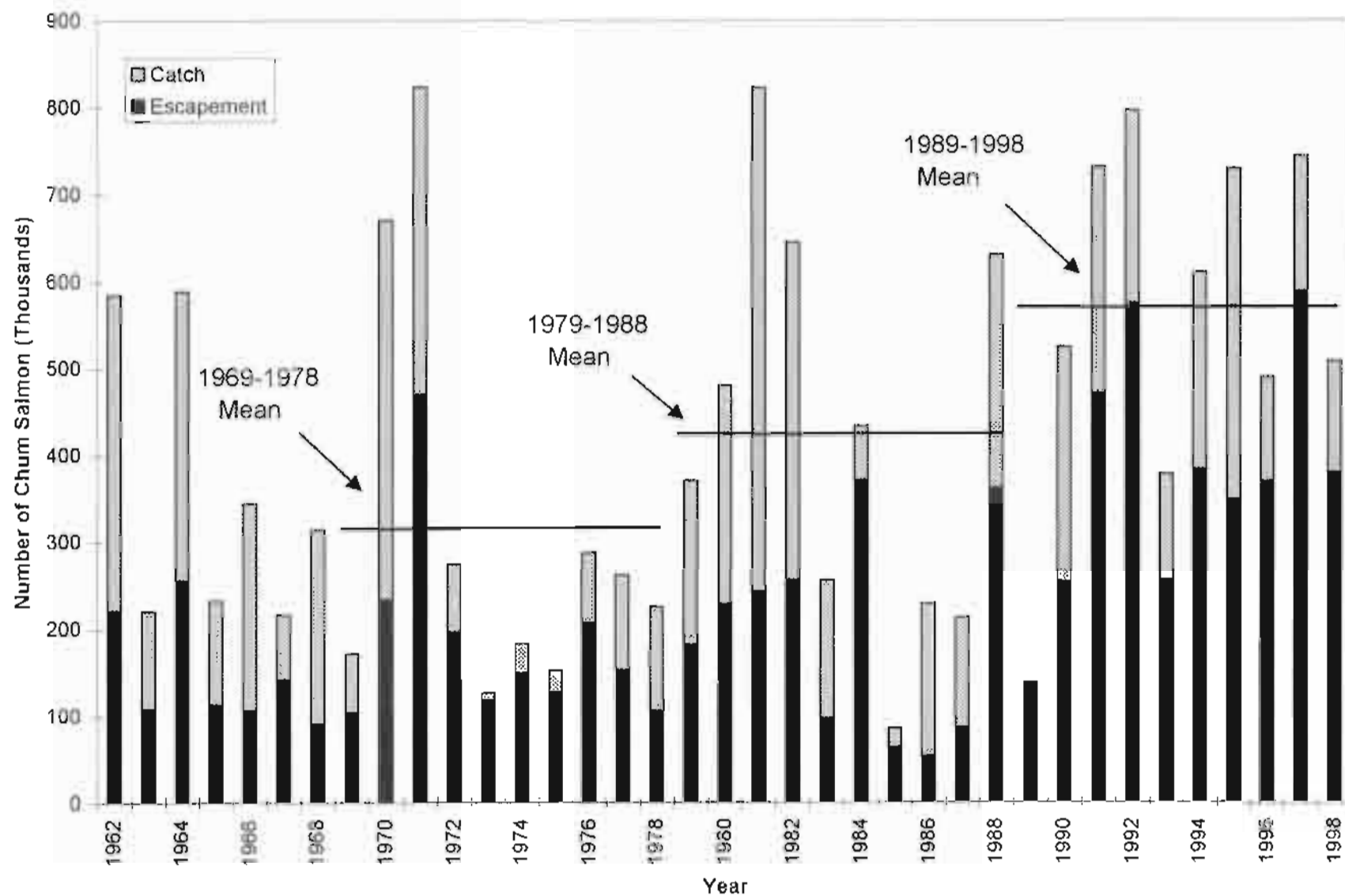


Figure 18. Chum salmon catch and escapement in the Chignik Management Area, 1962-1998.

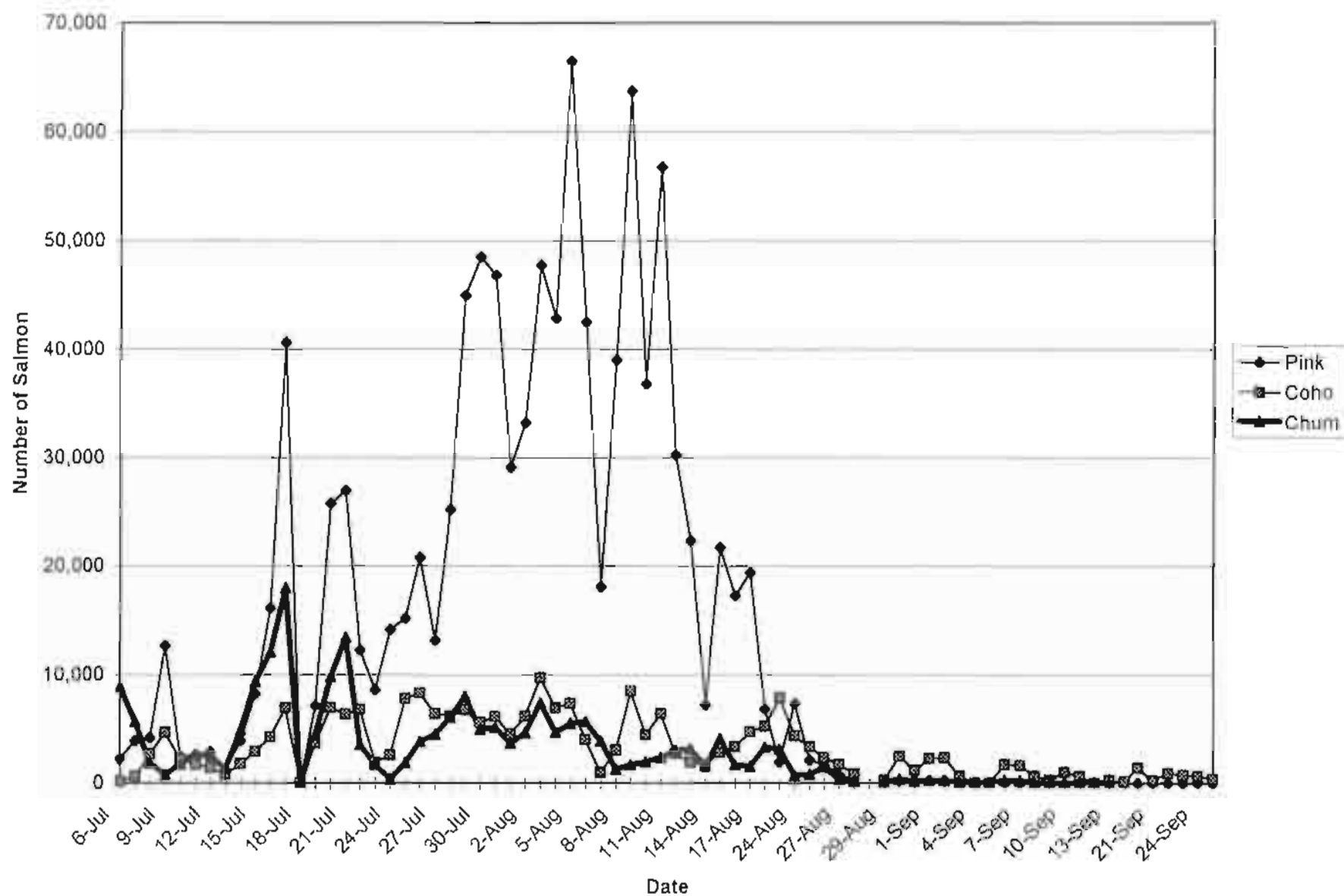


Figure 19. Average pink, chum, and coho salmon catches by day in the Western District, 1987-1996

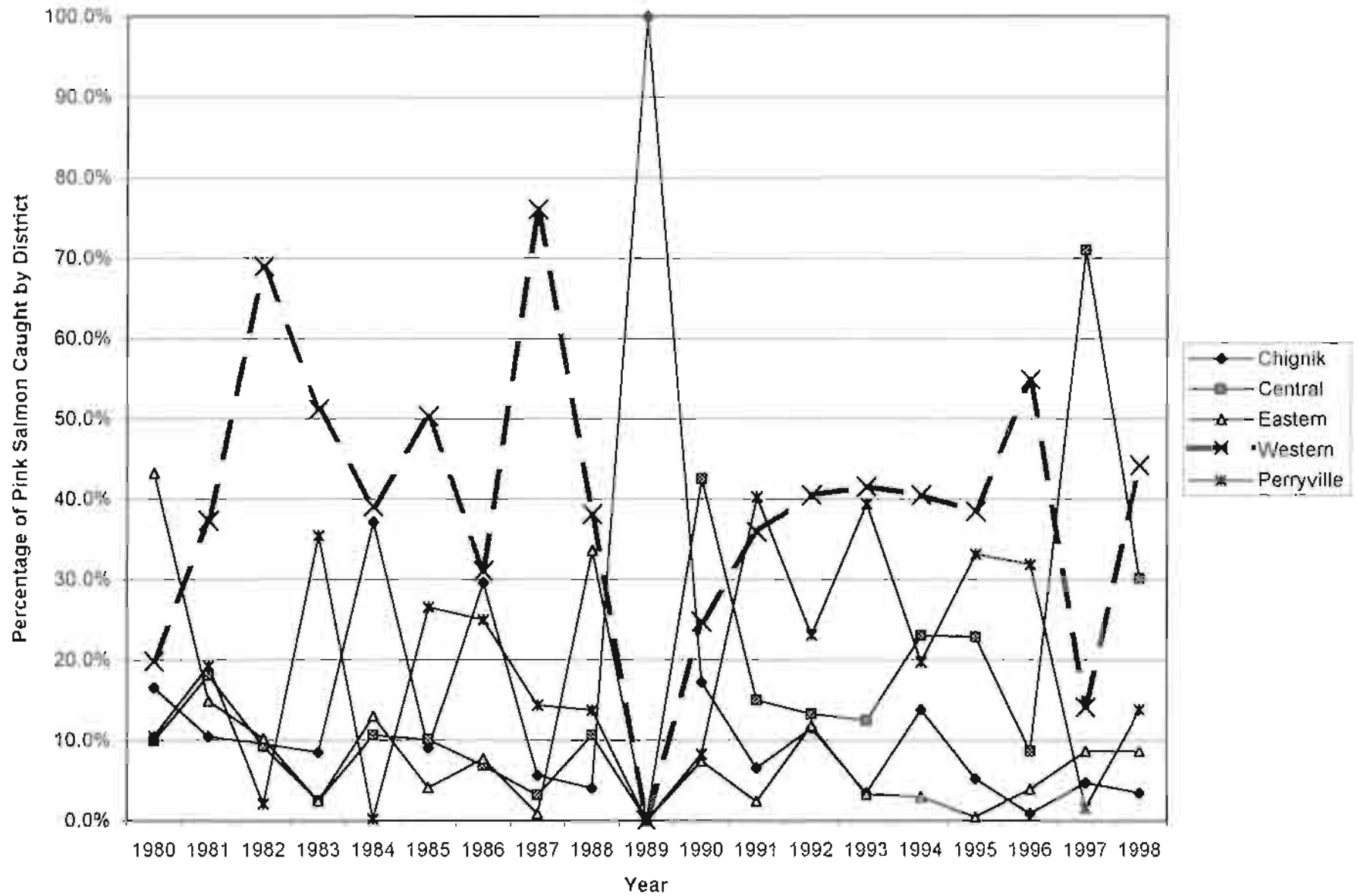


Figure 20. Percentage of pink salmon caught by district within the Chignik Management Area, 1980-1998.

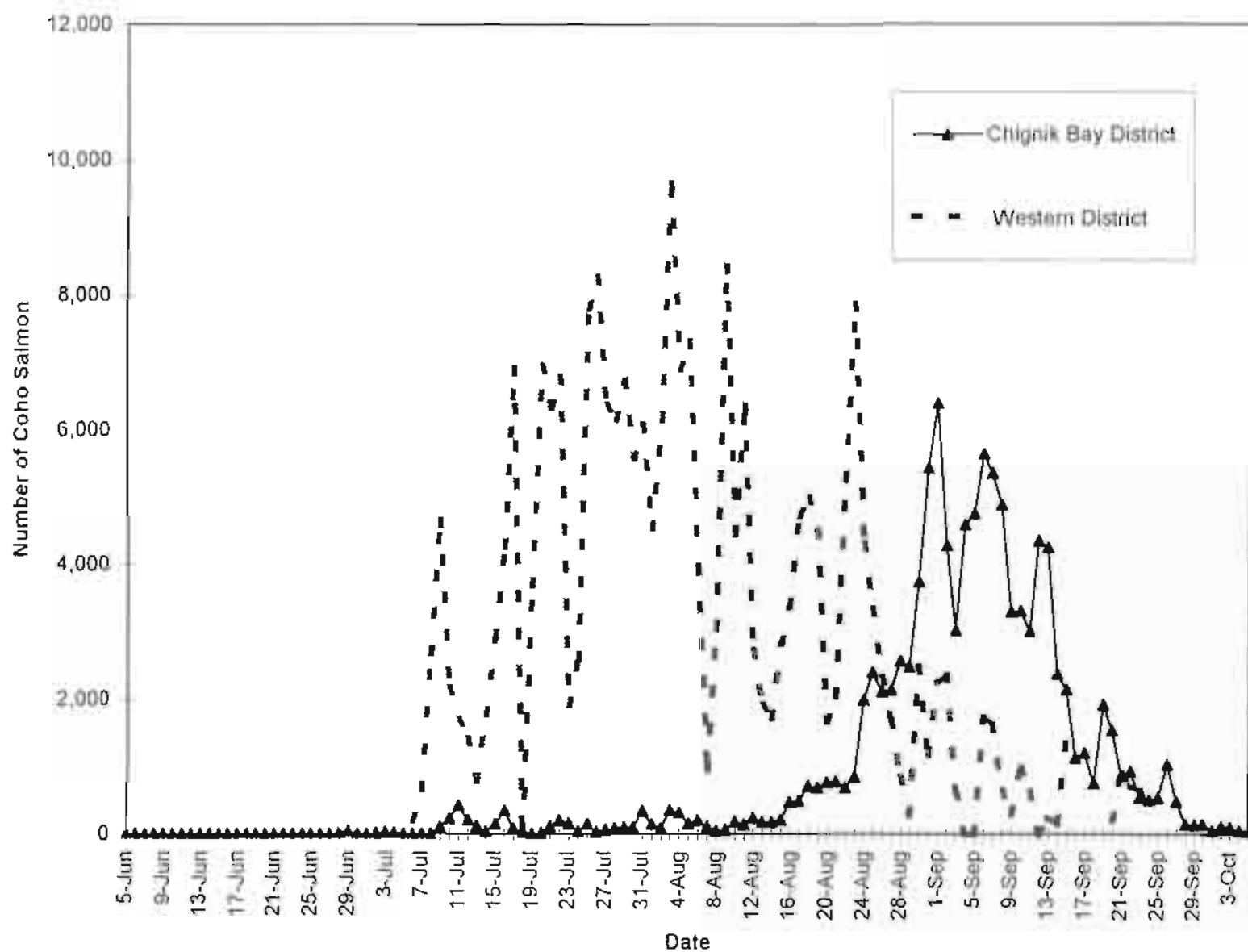


Figure 21. Average catch of coho by day in Western District as Compared to the Chignik Bay District, 1987-1996.

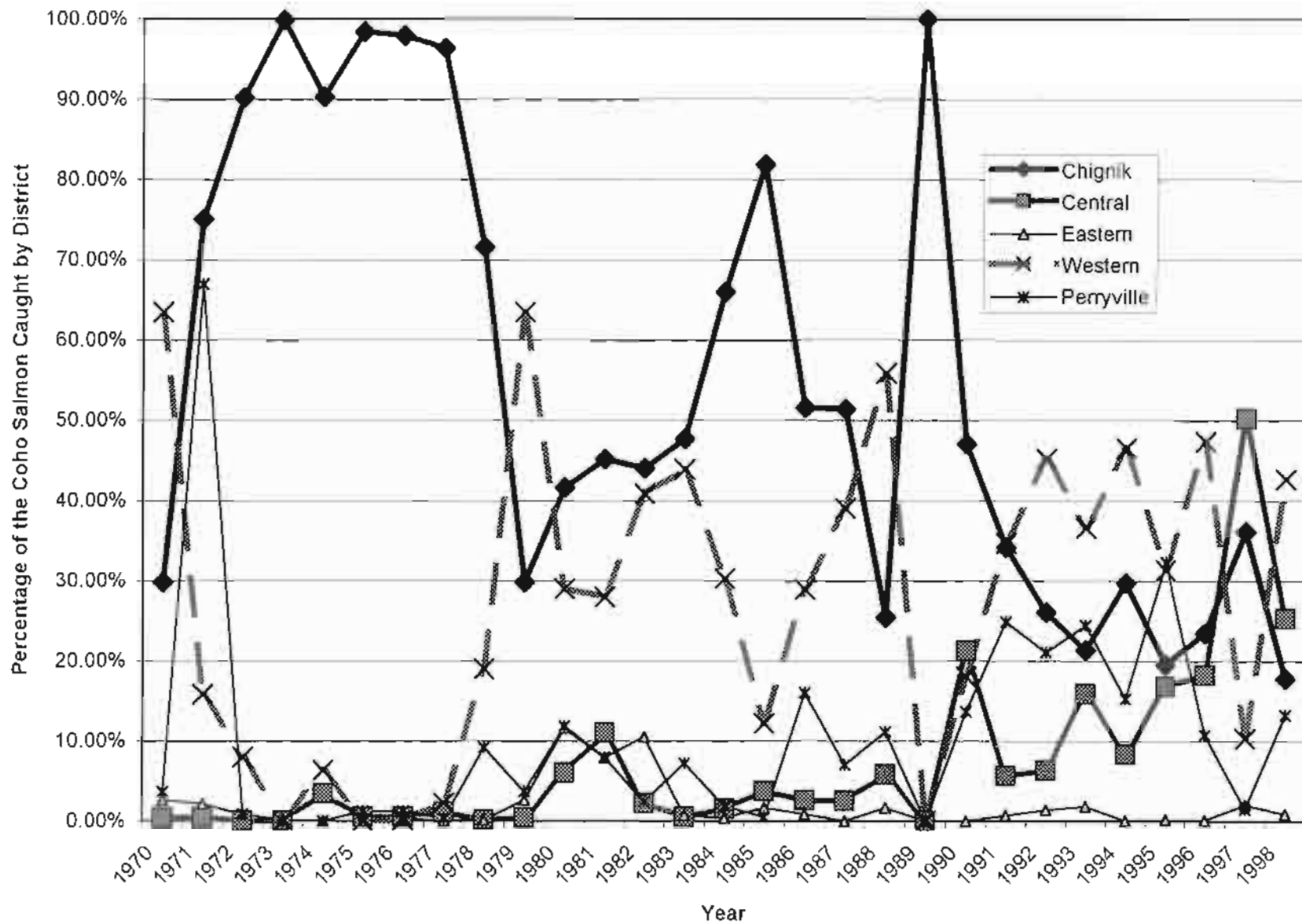


Figure 22. Percentage of the coho salmon caught by district within the Chignik Management Area, 1970-1998.

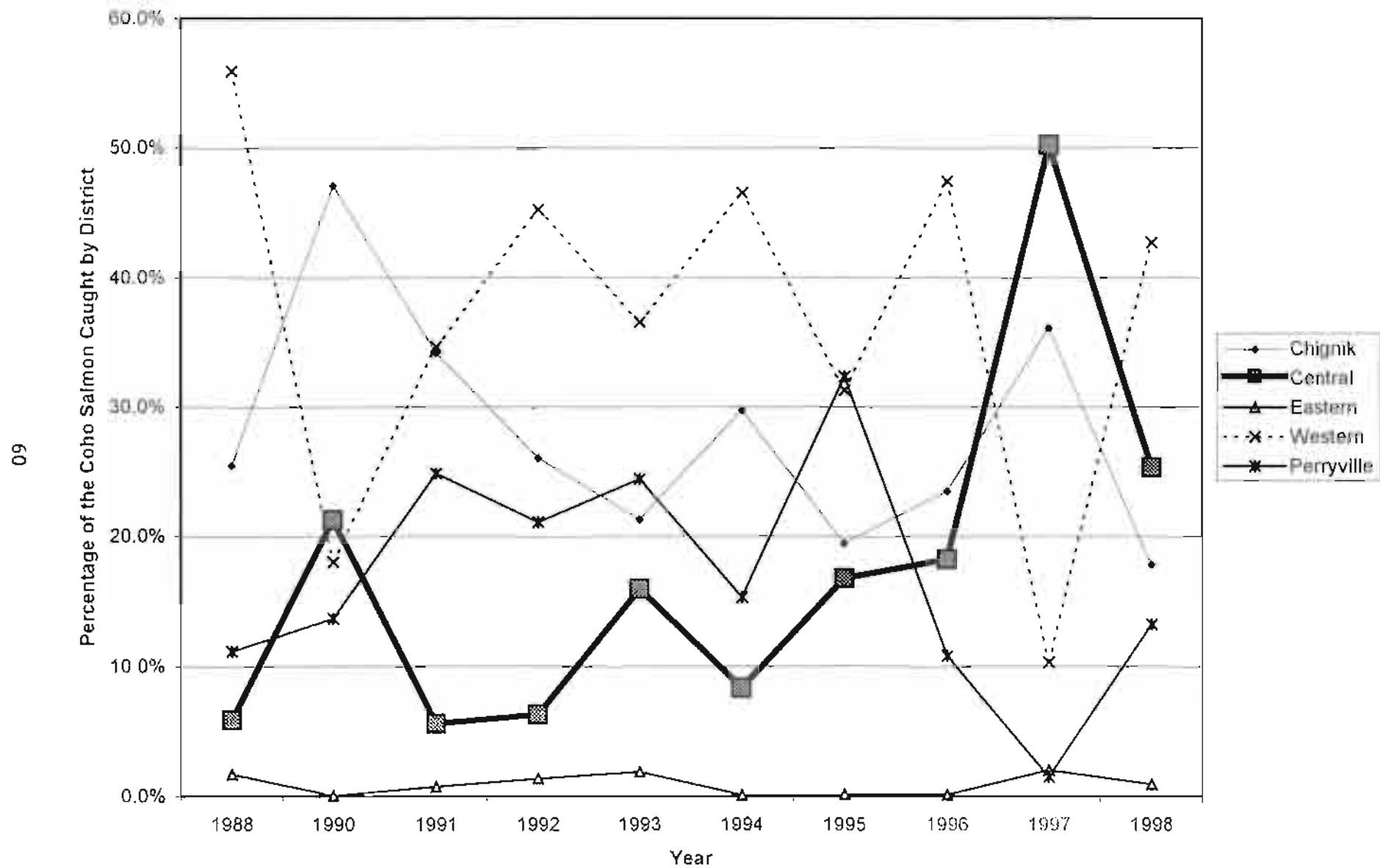


Figure 23. Percentage of the coho salmon caught by district within the Chignik Management Area, 1988-1998 (excluding 1989, oil spill year).

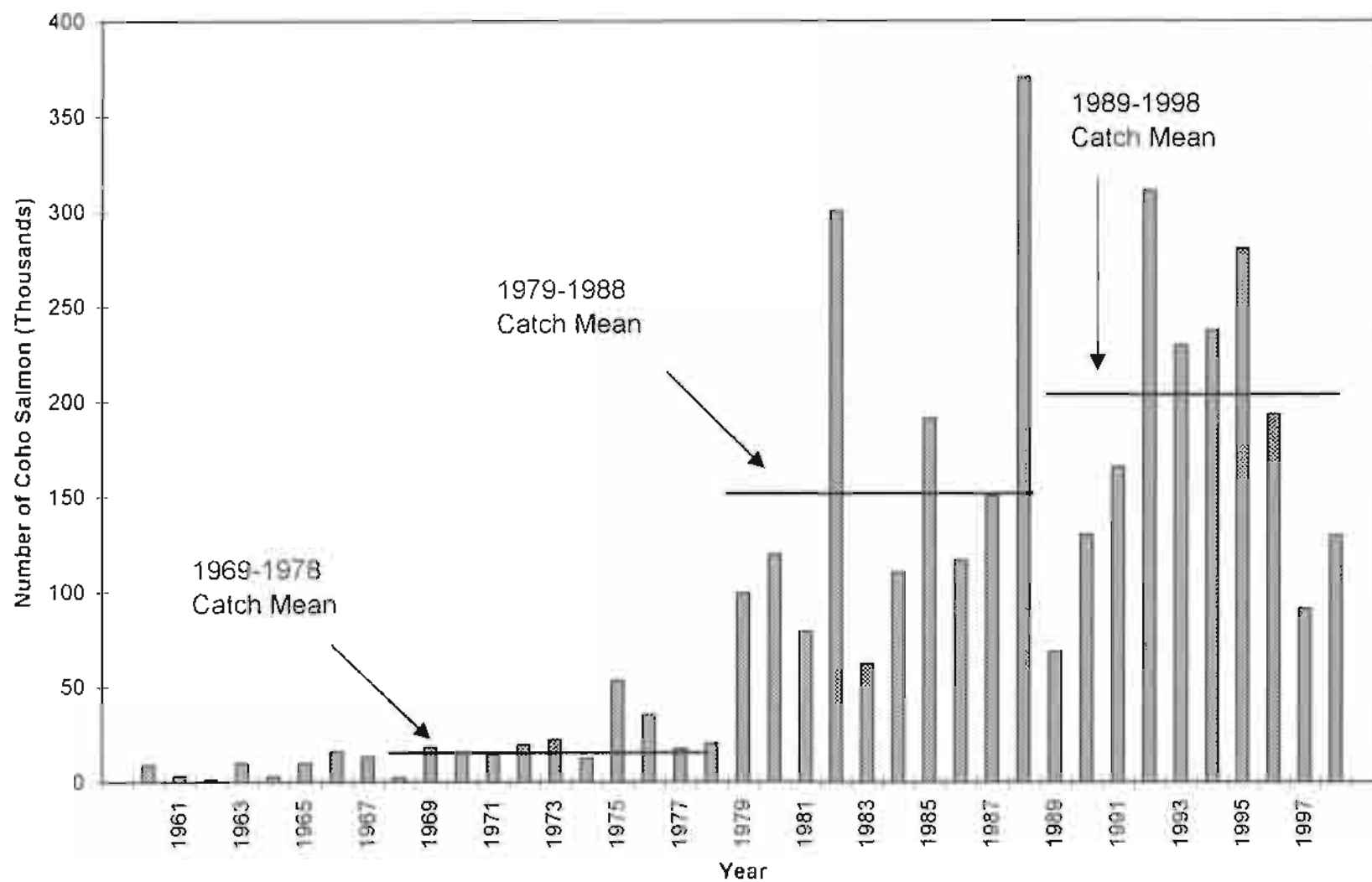


Figure 24 Coho salmon catch in the Chignik Management Area, 1960-1998.

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